



Total Quality Management in Education

Marmar Mukhopadhyay





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National Institute of Educational Planning and Administration
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Foreword

Management of quality at different stages and levels of education is a daunting task, not only in India but also the world over. In recent years, TQM has emerged as a viable alternative to achieve this goal. Judicious application of TQM to the contemporary scenario of education is no doubt urgently needed. But it also requires adaptation and fine-tuning to the Indian situation so as to make the technique of TQM optimally effective. I am happy to observe that Professor Marmar Mukhopadhyay has eminently succeeded in reaching this particular objective both at the conceptual and the operational levels. His research and reflection in this regard are presented in this book with commendable clarity and conciseness for the benefit of educators and educational managers.

If one takes a close look at the present system of education in India, especially the school sector, one finds that with the globalization on one hand and growing national ambition on the other, this sector of education is going through a phase of fast metamorphosis. While struggling to universalize elementary education by 2010 without compromising on quality, the eyes of Indian educators are wide open to the needs of near universalization of secondary education in coming decades. Choices, on the face of stiff international competitiveness, are limited; expansion of secondary education must be comprehensively reinforced with quality. The crusade will soon be for quality secondary education for all. From this angle, the book, *Total Quality Management in Education* is indeed a timely contribution.

Unlike industrial products, quality in education cannot be defined by product specifications. Humans are complex body-mind-spirit organisms. They are not just a knowledge and skill configurations; human configurations combine values, attitudes and a host of other affective attributes. Thus, quality education implies comprehensively developing individuals to their full potential, unfolding the 'perfection already in man' and woman. Challenge of management of quality in education is realizing optimally that perfection already resident in individuals not only among students, but also among teachers, non-teaching staff and principal. Importance is on the quality of life in the institutions where a student is shaped and teachers and others spend their prime of life. Continuous quest for quality both in education and in life has thus become a vital goal to work for right in the beginning of the new century and millennium.

Total Quality Management has emerged as a major technique in improving and sustaining quality in education. Derived from the industrial applications, TQM has been extensively and intensively adapted and experimented in

education all over the world. The major spurt of activities in TQM in education is in the nineties of the last century. Rich conceptual and research literature appeared in several journals of education and educational management; online search indicates ever-growing stock on TQM in education in the Internet. Such a world wide development stands testimony to the fact that TQM is undoubtedly a promising movement that has not only begun but also taken off. This book has, as its backbone, the skillful review and perceptive assimilation of this vast professional literature on TQM in education.

Very often, our professional literatures are overwhelmed with western literature and wisdom. However, they need to be adapted to the local cultures and ethos as indicated above. The texts need to be informed by western literature but anchored in the educational ethos and culture of our own society. It is heartening to note that there is a sincere effort evident in this book to anchor TQM to Indian culture and educational scenario through citing of Indian experiences and cases, and quoting from ancient Indian literature in Sanskrit at various places.

To my knowledge, this is the first comprehensive book on TQM in Education in India. Professor Mukhopadhyay deserves our congratulations and thankfulness for making such a pioneering effort in this vital field. I wish this valuable work all success in stimulating a movement on quality management in education.

I am aware of the fact that NIEPA has been publishing the reports of its institutionally funded research projects. Prof. B. P. Khandelwal, Director deserves special compliments and thanks for a major policy shift of adding scholarly works of the faculty on the list of publications of NIEPA.

Hamburg, Germany
2 October, 2000

Ravindra H. Dave
(Former Director
UNESCO Institute of Education)

A Word

Youth is the prime resource of the country. The development of the country rests squarely on the shoulders of her youth. Youth is shaped in the classrooms of her schools and colleges. Thus, the quality of youth is directly dependent on the quality in education. Quality has, hence, rightly been expressed as a major concern in Indian education. There have been major policy statements on improvement of quality in education; there have as well been efforts to assess and control quality. However, it has not yet been possible to get a firm grip on the management of quality in education.

The centralised mechanism of quality control through administrative measures like grants-in-aid, inspection and supervision, centralized textbook production, teacher qualification specification have proved inadequate for the challenge. Not without reasons, hence, the trend, world over, has changed in favour of decentralized school-based quality management. Each school has a personality of its own, and it must develop according to its own road-map.

Total Quality Management offers a strategic opportunity for continuous school-based quality improvement. This is the first Indian book on Total Quality Management in Education. It is anchored in Indian culture and ethos. Professor Marmar Mukhopadhyay deserves compliments for gelling competently the western knowledge through extensive review of literature on total quality management with his vast and varied experience in Indian education.

Without wider dissemination, research and development efforts remain incomplete. For wider dissemination, NIEPA has been publishing reports of institutionally funded research projects in the form of books and occasional papers; also reports of major national and international conferences on education organised by NIEPA. This book is in a different category; it is not an institutionally funded research project. It is a scholarly work of one of the members of NIEPA faculty, adding simultaneously to the current knowledge in the concerned field and strategic methodology for quality improvement. I must add, however, that the views expressed in the book are those of the author; these are not necessarily NIEPA's official viewpoints.



Preface

With the phenomenal expansion of education at all levels, management of quality posed a major challenge. Globalization has added a new dimension; for, it is not just the globalization of economy, but also globalization of socio-cultural institutions including education. The challenge has narrowed down to global standards.

NIEPA has indicated its professional resilience as an institution to new developments and challenges in education. Several of my colleagues have conducted research on quality in education. These researches have not only assessed quality in education, but also shed lights on what constitute quality in education, namely indicators of quality. Continuing on the tradition of the Institute, my efforts are in search of a paradigm for management of quality.

Total Quality Management (TQM) is a well tested strategy for management of quality in education. It has been extensively experimented in both school and higher education. It has been successfully experimented at micro-operations like classroom instruction, staff selection, etc. as well as in macro systems like a university, and mega system like a district. TQM is human intensive compared to other cost intensive approaches; hence it eminently suits Indian education.

In this book, I have tried to adapt the philosophy and the concept of TQM in Indian educational ethos and conditions on the basis of my more than three and half decades of experience in education at different levels. Lest it be misconstrued that quality in education is an exclusive western concept, I have referred to ancient Indian texts in Sanskrit to indicate that ancient Indian education meant excellence.

I must mention that this book is one of the multiplicity of efforts in TQM in education. Other two efforts are field research in TQM in education, and training of heads of institutions, educational administrators and research professionals in TQM in education.

Prof. B. P. Khandelwal, Director, NIEPA has been very encouraging and supportive to my efforts in persuading quality improvement in education through TQM. I have also benefitted from his comments on the manuscript of this book. I am grateful to him for his support. I thank Prof. Ravindra H. Dave, an eminent educationist and former Director of UNESCO Institute of Education, Hamburg (Germany) for writing the foreword.

I thank Dr. Madhu Parhar for reviewing and offering critical comments on the subject at different stages of development of this book. I also acknowledge with thanks the assistance rendered by Ms. Sriparna Bhattacharya at the final stage of the manuscript preparation. I thank Sri P. N. Tyagi for helping me in drawing some of the figures.

The library of NIEPA is very special; its very proactive culture provides significant support to such serious works. Ms. Nirmal Malhotra, Senior Librarian and her team deserve special words of appreciation for their academic support.

I thank Dr. D.N. Khosla for the meticulous copy-editing of the manuscript. I am equally thankful to Sri Soumen Panja for the page-setting and Sn Sabyasachi Panja for the cover design. Mr. M.M.Ajwani and Mr. Amit Singhal did an excellent job of technical review of the manuscript. I thank both of them.

05 January, 2001
NIEPA, New Delhi

Marmar Mukhopadhyay

Quality: The Concept and Issues

Introduction

The quest for quality has been the characteristic of the entire history of human civilization. It has been the driving force behind all human endeavours. Quality is something that stares at you, something you do not fail to recognize but find it difficult to define. Though quest for quality has always attracted the consumer, yet precisely, the exact definition of quality has largely remained elusive. It is very similar to describing beauty. You do recognize and admire a beautiful flower. Any amount of description of the flower – its petals, colour, shape, size, fragrance, softness -- falls short of conveying its beauty fully. It is perceived and recognized. It is best left to the admirer to perceive and appreciate. As Stephen Jay Gould said of nature, the beauty “lies in detail; the message in generality. Optimal appreciation demands both ... (quoted in Yudof and Busch-Vishniac, 1996). Should we use a transferred epithet from beauty, quality lies in the eyes of the consumer. What is ‘great’ for one may not be good enough for another.

Quality has been defined as “The nature, kind or character (of something); now restricted to cases in which there is comparison (expressed or implied) with other things of the same kind; hence, the degree or grade of excellence, etc. possessed by a thing” (*Oxford English Dictionary*, 1970). It further elaborates, “The notion of quality includes all the attributes of a thing, except those of relation and quantity. ‘Quality’ is the third of the Aristotelian categories”. The British Standards Institution (1991) defines quality as the totality of features and characteristics of a product or service that bear upon its ability to satisfy the stated or implied needs.

Sallis (1996) contends, “Quality is a dynamic idea and exact definitions are not particularly helpful. However, its range of meanings does cause confusion. Important practical consequences flow from these different meanings.” It is not

merely a dynamic idea, quality is essentially a positive concept. As Crawford and Shutler (1999), while interpreting Deming, put it, "Quality for Deming is, therefore, a positive concept meaning how useful or valuable a product is to the person who purchases it, rather than negative concept being simply the absence of defects. Navaratnam (1997) makes it specific by defining quality in functional terms. What really comes out of these various efforts in defining or describing quality is that quality is a positive and dynamic idea achievable by design with meaningful investment. Shejwalkar (1999) contended, "After all, quality is essentially a product of intensive investment of capital, talent and hard work. Quality cannot be superficially achieved. Quality is not a chance, but a choice. Quality again is not an accident, but a design. Quality is not a destination, but a continuous journey". The quality journey is characterized by a customer-focused approach to continuous improvement of processes, products and services through an interdependent system of planning, implementing, evaluating and decision making (Navaratnam, 1997). Oakland (1989) after a detailed analysis concluded and defined quality as "the degree of fitness for purpose and function". Like Navaratnam, Oakland's is also the functional definition. Quality, as a concept, I guess, deserves detailed consideration and analysis from several strands; for, only that can help us develop some acceptable propositions (not definition) on quality. We should then see what are the implications of 'quality' for education.

Indeed, there are gradations in the difficulty in defining quality. Easiest probably is defining product quality – life style products and consumer products. These are largely the output of cottage and large-scale industries. The problem becomes serious as we enter into the domain of service – the quality of service. This inadequacy in defining quality has precisely been the problem of management of quality in the service sector. The issue gets far more complicated and nearly impossible as we move on to defining quality of humans that is shaped in education. Let us hence try to look at the concept of quality initially around industrial products; we will subsequently move on to the issues of quality in service and then to education.

Let us take the case of an industrial product of daily use, a fountain pen. There are several attributes that determine the quality, e.g. functionality, durability, repairability, shape and size, aesthetics or finish, design, colour, uniqueness, cost, etc. Evidently there will be wide divergence of views on each one of these attributes. A shape that is 'fantastic' for one user may be 'awful' for another. When someone will emphasize on durability, others may prefer a fancy shape and colour but 'throw-away' material at low cost. We can go on arguing the case, which may not be necessary. The main contention is that quality is

something that depends on the perception of the user or the customer – fitness for the purpose.

The issue becomes more complicated in the service sector – service in a hospital, a restaurant, a government office, railway or airlines booking, etc. There are several parameters of service quality, namely, punctuality or timeliness, cost, civility or courteousness, speed, accuracy, etc. Once again, there can be wide divergence in perception of quality. For example, there are customers who prefer a slow but courteous booking clerk with smile on the face whereas others care a hoot for the smile but prefer time savers and accuracy. Hence, in service sector too, client's perception is the final index of quality.

In education, perception of quality is often around students – their quality. I recollect a statement made by the semi-literate mother of one of our friends. When one of his classmates got doctoral degree, he ran home and announced to his mother the great achievement of his friend. Mother replied coolly, "Yes, he has become a 'doctorate', but not a proper human being". The semi-literate lady hinted at the missing qualities in the person like cooperation, sharing of responsibilities, care for others, sympathy for the weaker ones, etc. Even if we restrict attributes of quality in education only to the students, quality can be described in terms of cognitive, emotive, physical skills and abilities, and value systems. The International Commission on Education for the 21st Century in its report 'Learning: The Treasure Within' wrote, "wherever it met, the Commission heard the hope expressed that formal education, and secondary education in particular, could play a larger part in helping develop the *qualities of character* (emphasis added by author) that would enable young people to anticipate and adapt to major changes" (UNESCO, 1996). Some prefer humans with strong value systems to academic excellence, whereas some give exclusive preference over academic performance, equating it with quality. Here too, quality will depend upon the perception of the end user – students, parents, community, employer, etc.

Quality is meeting the expectations of the customers. But quality of education is more than meeting the expectations of the customers. In the context of distance education, Henderikx (1992) contended that quality can be defined as the intrinsic validity of the product of education with regard to fulfilling its academic mission. Further, a technological definition of quality involves matching the technical quality of the product with the technological requirements through quality assurance during the production process, e.g., course development needs monitored by effective project management and supported by educational technologists in order to make a product that is suitable for a flexible learning system.

From the various descriptions and discussions on quality, quality can be regarded as :

1. Perceptual (as perceived by the consumer);
2. Both Process and Product (Product carries manifest quality, process provides the intrinsic support);
3. Exceptional (something special; in operational terms you have scale or steps of its achievement and a cut-off point),
4. Perfection (or consistent: in other words it identifies a specification to be met absolutely);
5. Fitness for Purpose (satisfying specified intentions);
6. Value for Money (self-explanatory); or
7. Transformative (captured by the terms like 'qualitative change' or 'continuous improvement' (Harvey and Green, 1993)

Quality Management Issues

There are several major issues in quality management. The issues are related both to the concept of quality and techniques of quality management. Indeed, it is the concept that determines adequacy and effectiveness of quality management tools and techniques. Quality management has been defined as a 'set of concepts, strategies, tools and beliefs, etc. which are aimed at improving the quality of products and services reducing the waste and saving costs'. (Navaratnam and O' Connor, 1993).

Absolute versus Relative Quality

The major confusion in conceptualizing quality arises since it has both absolute and relative connotations – absolute connotations at least in the popular parlance. Sallis (1996) deftly dealt with the concepts of absolute and relative quality and customer defined quality. For example, at one stage, people used to say Shaffers, in the world of pens, and Rolls Royce in the world of cars, are the 'last words'. This implied absolute quality. Shaffers and Rolls Royce meant the highest standard in pens and cars, respectively. Shuttle indications are their uniqueness that has been achieved by sparing no effort and cost. Other implications of absolute quality products are the expensiveness, uniqueness and prestigiousness that set the owners apart from others who cannot afford it. In the language of modern advertisement, it is not owning, but possessing.

The designer items like watch, pendant, footwear, dresses are not uncommon in India. The unique features of designer items are that they are enormously expensive but 'only one of its kind' – no one else, has that. In the language of Pfeffer and Coote (1991 – as quoted in Sallis 1996), absolute quality is something -- "most of us admire it, many of us want it, few of us can have it".

Just as we mentioned about Shaffers or Rolls Royce as the industrial products, there is so-called absolute quality in service sector too, e.g. DHL in courier, etc.

Similarly, when references are made to the four Indian Institutes of Technology (IITs) for engineering and technical education, there is a hidden statement of absoluteness in this field in India. Popular references to Oxford University or Harvard University represent the same sentiments and feelings of the ultimate in quality. Whether scientific or not, measurable or not, this concept of absoluteness in quality props up the morale of both the supplier and the customer. Quality is a class, and that sets apart one product from another, one process from another and one organization from another. Probably, the reputation of an institution is the function of this *absoluteness* in quality.

Quality can also be defined in relative term; in fact, it is a relative concept since there are, and can be, several shades of quality. The relative quality becomes evident when products, services and processes of several organizations are compared at a given time. The relativity of quality can also be described for the products or services of the same organization over time. In TQM, catchword is 'be the best and stay there'. While be the 'best' is apparently an absolute concept but the best among the better ones gives the relativism. Further, 'staying there' makes it all the more relative because other better ones are approaching the standard of the best and hence the best has to continuously move further. British Standards Institution defined the relative quality as "fit for the purpose". There are two implications – functionality of the product and meeting the minimum basic standards. Sallis (1996) defined quality, "they must do what they claim to do, and do what their customers expect of them". He cited the examples of overhead projector and ballpoint pens.

When we compare quality of a consumer product like Colgate, Pepsodent or Close Up to other toothpastes, we are essentially referring to relative quality. Same is the case when we compare courier companies like DHL with Blue Dart or one hospital with another; or one school with another. The other relativism is over time from the same company or organization. A statement like, with computerization, the railway reservation has become much easier is an indication of relative quality over time. Same is the case, when people

nostalgically recollect how good was the school when they were students.

Thus relativism in quality raises two parameters – measuring up to the specification and meeting the customer needs. If we look at the Indian scenario, companies proudly display the ISI mark as a sales strategy. ISI mark is, indeed, indicative of product specification; the mark is available to those products that satisfy the specifications. The second parameter is customer satisfaction and requirement. Despite the ISI mark, the customer may not be satisfied. A product, say glycerine, from two different companies, both with the ISI mark enjoys different customer reaction and preference. Taking the argument further, product specification is actually the minimum necessary condition for quality, but not the sufficient condition. Sufficient condition is the customer satisfaction and beyond. The ISI mark, BS5750, ISO9000¹, etc. guarantee the minimum assured quality only.

Looking at the issue in another way, meeting the product specifications to a predetermined level is the 'supplier-defined quality'. How does the customer define quality? This is important since customer is the final authority. As mentioned above, although more than one brand of a product may fulfil the supplier determined quality, customer may prefer one product to another. It depends upon what satisfies the customer needs and goes beyond. It is quite common to come across '25 grams extra' or 'buy two get three' kind of schemes in many of the standard consumer products like toothpaste, soap, etc. This in a way is going beyond through value addition.

Relativism in quality is also linked to the economic class of the buyer. In the affluent society, perceived quality is better determined by prestigiousness and price than functionality. A satisfied customer will always be prepared to pay for his or her choice. This is precisely why people go for high priced products in washing machines, television sets, etc. Similar trend can be found in service sector. Many organizations that hire security agencies prefer Ex-Service Men Companies for their employees' discipline, skills in crisis management, etc. despite higher cost.

On the issue of customer defined quality, Peters (1987) argues that customer will always pay more for the best quality, regardless of the type of product. Peters also found that employees get enthusiastic when they produce a quality

¹ Sallis (1996) devotes a full chapter on ISO 9000 Series and Other Quality Marks

product. Important message from Peters' argument is the importance to be attached to the customer defined quality rather than the quality defined by the producer.

Quality Control to Total Quality Management

Quality control was probably the first technique to arrive on the scene in early 1930s, so far as quality management is concerned. The term, 'total quality control' was originally coined by Feignbaum (1983). "Quality control in its broadest sense, refers to a spectrum of managerial methods for attempting to maintain the quality of manufactured articles at a desired level" (International Encyclopedia of the Social Sciences, 1979). The basic agenda of quality control is detection and elimination of products that do not match the product specification. Quality control takes place after the event (Fidler, 1996). Quality control has been defined as "the procedure of establishing acceptable standards with defined limits of variation in quality of material, size, weight, finish or other characteristics for goods or services, and maintaining these standards" (Johannsen, 1968). Quality control can thus also mean avoiding either too high quality as well as too low quality, in other words sticking to the predefined quality (Johannsen, 1986). As a typical process of quality control in industrial production, sampled products are picked up from the conveyor belt and subjected to scrutiny as per the product definition. This obviously implies scrap and waste, and increase in the cost of production.

Quality control also took active support of statistics for quality control leading to the development of Statistical Quality Control (SQC) techniques. 'Statistical quality control can refer to all those methods that use statistical principles and techniques for the control of quality. In this broad sense, statistical quality control might be regarded as embracing in principle all the statistical methodology for quality control (International Encyclopedia of the Social Science, 1979).

The alternative form of ensuring quality is Quality Assurance (Tovey, 1994). This involves designing systems to deliver quality before the event (Fidler, 1996). Quality assurance is a later development in quality management. As the title suggests, emphasis is on assurance, rather than on detection and elimination of products that do not match the product definition. Quality assurance is a strategy of prevention of production of wasteful defective pieces. Oakland (1988) identified five stages or attributes of quality assurance mechanism. These are:

1. Dealing with quality planning;
2. Providing quality advice and expertise;

3. Training of personnel;
4. Providing inward goods, process and finished products appraisal methodology; and
5. Analyzing customer's complaints, warranty claims and product liability cases.

Thus, "a quality assurance system, based on the fact that all functions share responsibility of quality, provides an effective method of acquiring and maintaining desired quality standards" (Oakland, 1988). BS-5750 contains a particular set of quality assurance procedure.

A significant emphasis in quality assurance is on the quality of the product design – an advance prototyping of the product. Equal emphasis has been laid on the quality of translating the design into product conforming to the original design. The product is the outcome of interaction of input and processes. The quality assurance mechanism ensures right quality of raw material and equipment as input and rigorous process quality so that product quality is ensured. The specifications of raw material, equipment and process go a long way to assure quality. This has been defined as mechanism for ensuring 'zero-defects' and 'right first time right every time' product.

Total quality management is an extension and further built up on quality assurance approach. The emphasis is not only on managing quality at the input and process points but in developing a 'quality culture' among all employees. The thrill in TQM is in thrilling the customer. The customer then talks to their friends; and hence the reputation of the product and the company goes up. Consequently, the product market goes on expanding. TQM being a dynamic concept, it also accommodates the concept of changing customer needs and wants; hence TQM anticipates and changes the products to meet the changing customer needs. Unlike quality control and quality assurance, TQM is dynamic; it does not accept any definition of quality as final. Effort is to define new heights in quality and achieve it. A related concept is reliability of quality. All the techniques that ensure 'during design, production, servicing, etc. both work and materials within limits that will produce the desired production performance are reliability'.

Sallis (1993) depicts a sequential movement from quality control to total quality management (see Figure 1.21)

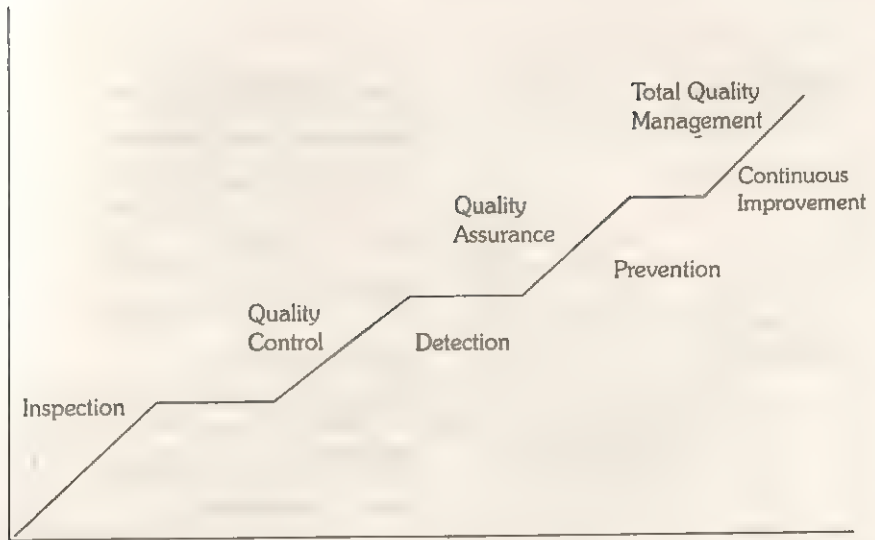


Figure 1.1. Hierarchy of quality concepts

Source: Sallis, 1996

Dale and Plunkett (1990) reviewed quality control, quality assurance and total quality management, preceded by quality inspection in a hierarchic model of quality management (Table 1.1).

Table 1.1. The hierarchy of quality management

Quality Management Approaches	Activities
Total Quality Management	Involves suppliers and customers
	Aims for continuous improvement
	Concerns products and processes
	Responsibility with all workers
	Delivered through team work
Quality Assurance	Use of statistical process control
	Emphasis on prevention
	External accreditation
	Delegated involvement
	Audit of quality schemes
	Cause and effect analysis

Continued

Quality Control	Concerned with product testing
	Responsibility with supervisors
	Limited quality criteria
	Some self-inspection
	Paper-based system
Inspection	Post-production review
	Reworking
	Rejection
	Control of work force
	Limited to physical products

Source: Dale and Plunkett, 1990.

Quality Management

The issue of quality management can be examined for industrial, service as well as education sector. Let us take the example of industrial product – from its design to production and marketing stages (refer Figure 1.1).

Evidently, quality choice and quantitative demands are the driving forces in quality management of industrial products. The 'Concept' (a typical expression of the designers) – the creative or artistic impression of the product, jointly with cost consideration, goes as an input into the product design. The product design leads to the development of prototype of the product itself; in fact, the first consumer, namely the wholesaler approves the product prototype before it is put to production. The product design specifies the type and the grades of the raw material, the equipment to be used, the process, e.g. at what temperature for how long, and of course the product. The product thus produced is subjected to sample quality check before putting on to the market for the consumer. The quality management vis-à-vis industrial product depicts the seminal importance of quality of design and quality of conformation to the design (Oakland, 1988).

This brief description of the industrial product with built-in quality management allows us to take three possible strands from where the issue can be examined, namely quality control, quality assurance and total quality.

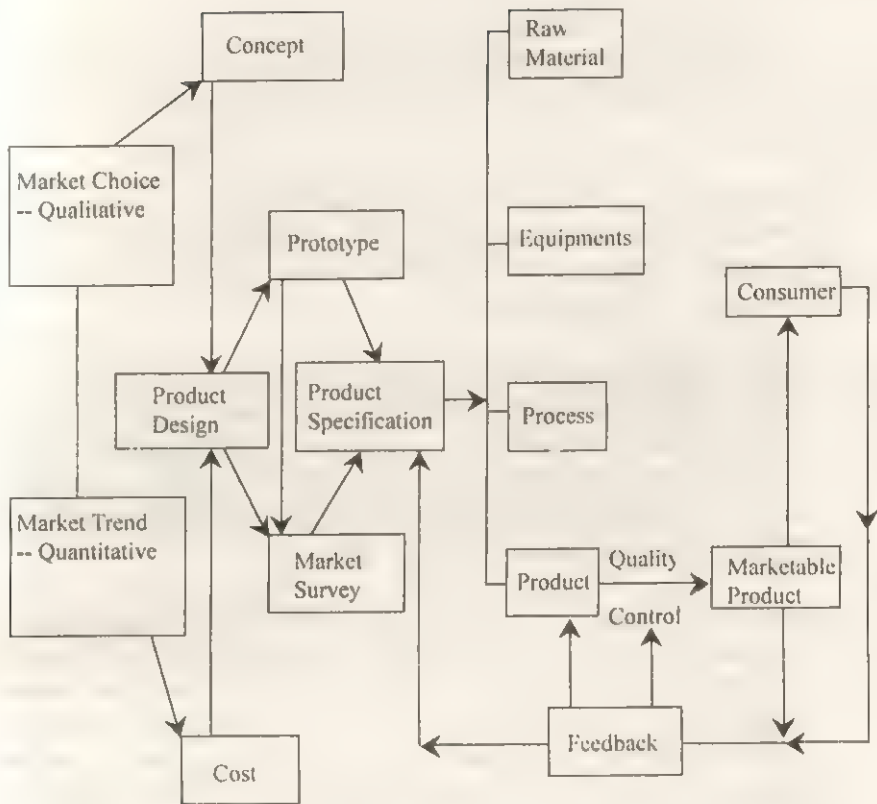


Figure 1.2. Quality management in industry

Service Sector

The second strand is to look at quality concepts in service sector. As mentioned earlier, this is more difficult than dealing with the quality issues vis-à-vis industrial products. Firstly, unlike the consumer products, it is difficult to precisely define the quality specifications in service sector. For example, when you commission an agency for cleaning your institutional premises, you cannot precisely define what quantity of dust (left) is acceptable. Several authors have dealt with this issue earlier. The major problems pointed out are:

- Unlike the industrial products, service providers are in direct contact with the user; obviously, perception of quality of service gets influenced by the inter-personal relationship skills of the provider and the consumer. For example, the account holder prefers a bank employee in the teller counter with courteous treatment to customers to another who may be faster and

more accurate but irritable. There is a further rider to this. Although the service providers are in direct contact with the customer, they are down the line junior employees, not the ones that design and manage quality of service.

- Appreciation of service is directly related to the timing. The hospital that provides quick service to an accident victim is always considered better in quality than another which is slow in offering the service despite the hospital being more clean and expensive.
- Defective consumer products can be either repaired, mended or sold on 'sale' at a cheaper price. Service cannot be repaired or recycled because it is 'here and now' – already provided. It cannot go back on time though it can ensure better service in future. In fact, that is the most serious problem – in poor quality health service, for example, damage is done. Once done, the health cannot be brought back.
- Finally, service being a relatively abstract concept, it is difficult to put forward what actually an agency offers. Often the sales personnel bring examples and evidences from the past. The schools and other service providers depend upon indirect arguments and evidences to impress upon the customer the quality of their service. For example, unable to present what a service company actually offers, the promotional material mentions how many institutions have hired their services, and so on. Let me share an incidence. During my first visit to USA, I took some photographs and gave the film for washing and printing to a store. On the specified date, I went to collect the photographs. Unusual though in USA, my film was not processed. I was given another date. I went on the second day, I was handed over the photographs. I offered the charges which was politely refused with an apology since the date was missed by the store. In this event for example, what does the store say to market themselves – that they serve free if fails to provide on date or they are always on time.
- There is wide divergence in the way customers perceive and describe the quality of the same service. Thus, the quality of service is determined by the way the customer perceives rather than the way it is provided. Consumer becomes the supreme judge of quality.

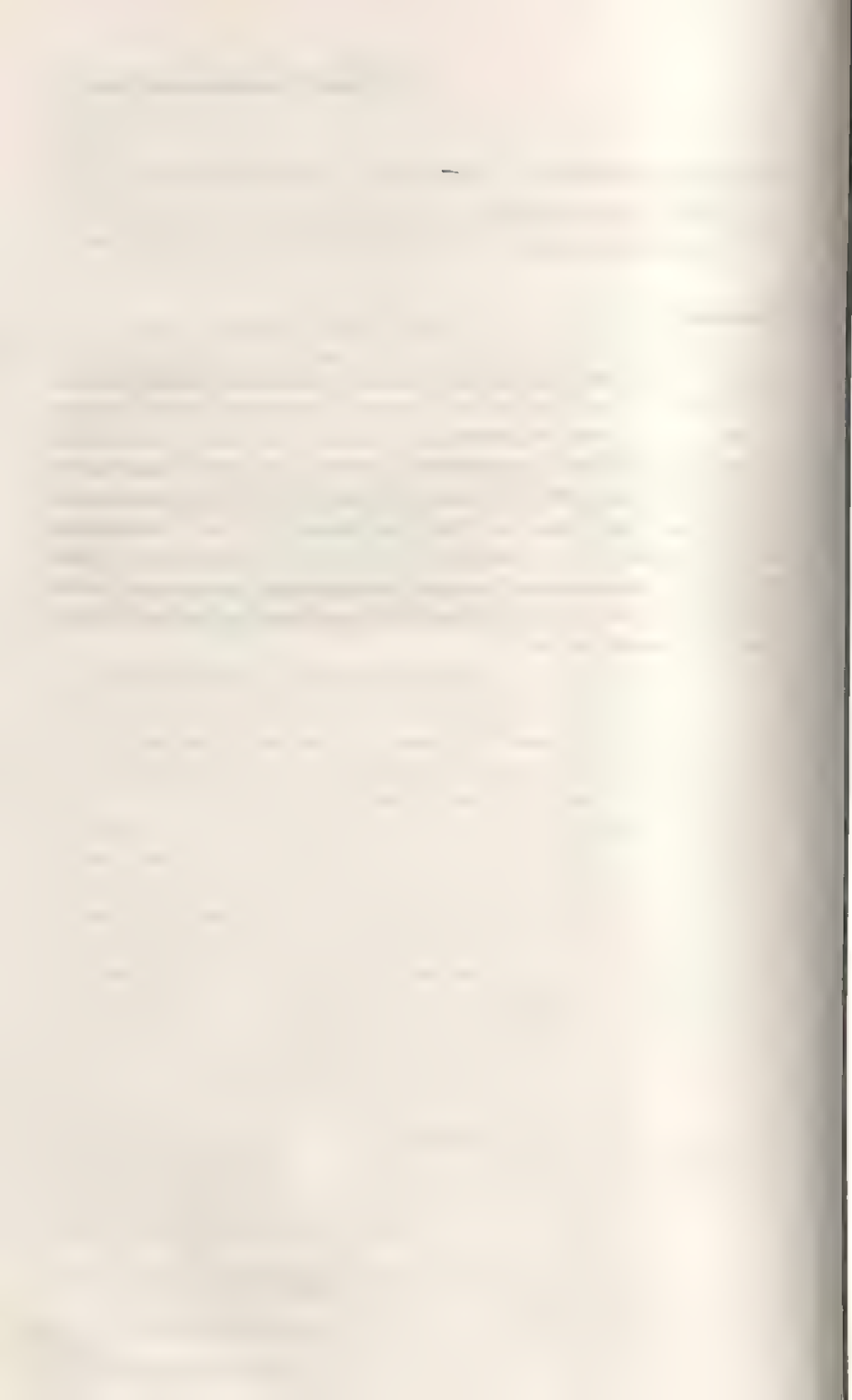
Thus there are five clear quality indicators in service. These are:

1. Inter-personal relationship
2. Timing and punctuality

3. Best here and now
4. Indirect evidence of quality
5. Consumer perception.

Conclusion

Quality has thus been defined in a host of ways – in terms of absolute and relative quality, it has been defined in terms of consumer perception, in terms of process and product, etc. Some have contended that defining quality is not particularly helpful, or it is futile. Yet every one is in search of it. Perception and assessment of quality differs from that of life-style products, organizational quality and service quality. There is a wide range of methods of quality assessment, control, assurance and management. Verily, an effort has been made to bring in the generic debate around the concept and methods of assessment of quality. Hopefully, this will help us in looking at the issue of quality of education from a sound conceptual platform.



Quality in Education

Introduction

As we move from the issue of quality of industrial product to quality of education through other service industries, defining quality enters greater zones of difficulty. Education deals with humans, though most talented yet most sensitive of the homo-sapiens that have ruled the world, rather the cosmos. Industrial products are finished goods; either take it or leave it. Nothing can be done once it is finished. Service is here and now. You can look for better quality only next time. Education has no finished product, nor even the graduates. They are on the way 'to be'. Education only charges the human propensities to evolve and unfold till the last breath. Human is a dynamic evolving being, within the same birth as well as over several births (Sri Aurobindo's concept of evolution of man). Human beings continue to learn, and continue to 'be' produced. Hence, how far the concept of quality derived from industrial sector will be relevant to education needs to be carefully examined.

The concept of and issues in quality in education have been widely discussed and debated both in the western world and in India. The major burden of this chapter is to review the western and Indian thinking on quality in education.

Quality in Education: The Western Viewpoint

Education is goal-oriented. One possible reference point for looking at quality in education can be the goals. There are individual goals and social goals. The individual goals and social goals may have zones of overlaps. Depending upon the goals, the term 'quality in education' has been variously defined as:

- Excellence in education (Peters and Waterman 1982),
- Value addition in education (Feigenbaum, 1951),

- Fitness of educational outcome and experience for use (Juran and Gryna 1988),
- Conformance of education output to planned goals, specifications and requirements (Gilmore 1974; Crosby 1979),
- Defect avoidance in education process (Crosby 1979),
- Meeting or exceeding customers' expectations of education (Parasuraman et.al. 1985).

Seymour (1992) provided the following outline while enumerating the quality principles in higher education:

Quality is

1. Meeting or exceeding customer needs,
2. Continuous improvement,
3. Everyone's job,
4. Leadership,
5. Human resource development in the system,
6. Fear reduction,
7. Recognition and reward,
8. Team work,
9. Measurement,
10. Systematic problem solving.

Seymour looked at the issue more holistically with greater emphasis on the processes rather than the products.

International Commission on Education in the 21st Century called for holistic development of the individual optimizing physical, mental, intellectual and spiritual potentialities. Human learning has as much to do with learning to 'know' and 'do' as much to learning to 'be' and 'live together' (UNESCO, 1996). Holt (2000) puts forth an interesting argument:

"Turning to quality in school systems, the first step is to consider what the 'product' might be, that is, to possess quality. I shall suppose that education is concerned with the development of minds of the pupils: schools produce educated persons who, by virtue of their schooling,

make their way in society to their own and society's benefit. How are these benefits to be construed? Is our aim to be in the pursuit of happiness? The creation of wealth through capitalism? The religious life, made manifest? Our concept of quality is dependent upon what we choose".

Just as there are wide variations in the individual goals of education, there are wide variations in social goals too. American priority on human rights and personal freedom in the 1960s has changed to success in global economy in the 1990s; Britain's current emphasis is on what the students 'know and can do' rather than on numinous goals (Holt, 2000). Japanese White Paper on education in the 1980s changed the focus to invention rather than on adaptation of technology. Indian social goal is also changing — from a literate society in the 1960s to a knowledge based society in the 2000. Emphasis is shifting from the previous value-neutral to value-oriented education.

Empirical research in education raises a few major issues vis-à-vis quality in education. Most prominent among them is the concept of school effectiveness. The contention is that the effectiveness is the indicator of quality. School effectiveness is an objective referenced mechanism of school assessment. It, more or less, surfaced with the landmark work of Coleman and others, in 1966, in the USA. Subsequently, it spread all over the world. *The International Handbook of School Effectiveness* by Teddlie and Reynolds (2000) provides a comprehensive critical document on the subject. The school effectiveness centres around measurable criteria whereas there are several intangible elements in quality in education. For example, the gallup poll of the public's attitudes towards the public schools indicates that 'the percentage of students who graduate from high school' is the most popular indicator of school effectiveness. This offers a limited opportunity to use school effectiveness as a comprehensive indicator of quality. Certain authors have also indicated their reservation that school effectiveness fails to accommodate the moral component of education (Reid, 1997).

The second major debate has been around the concept of accountability. The schools that impose and fulfil the benchmarks, relentlessly work towards the achievement of targets and results are accountable, hence quality. There is often a risk in benchmark based concept of quality. Even if the curriculum and instructional processes are weak and conventional, a school may achieve targets since they tune to the school tests and public examination. Hence, despite accountability, school may not offer quality in education (Winch, 1966).

Many authors have contended school based management as the indication of quality in education. At the first instance, school-based management offers a decentralized model of management in a context of autonomy. In such a situation, a school can design broad-based curriculum, offer a wide range of learning and assessment opportunities with freedom and opportunity to innovate enhancing pupil engagement; and thus offer quality (Holt, 2000). Beginning in Victoria, Australia in mid 1960s, school-based management has spread far and wide in many countries in the world. Several countries have official policies favouring school-based management. Abu-Duhou (1999) makes a comprehensive review of experiences and outcomes of school-based management. She concludes, on the basis of her review, that there is very little evidence that school-based management leads to quality in education.

In education, the same curriculum, equal weightages to all subjects, similar timetable, comparably qualified teachers, same set of organizational rules specified by the government stipulate what can be called as supplier specification of quality and some degree of process specification. Yet parents choose one school over another. We know several instances, when parents are scrambling to get admitted in one particular school for good quality education, another parent withdraws his/her child from the same school for dissatisfaction on quality of education. Parents, as customers, define quality of education differentially.

Quality in Education: Indian Perspective

Education has been seen as a serious business since it deals with and shapes human beings. Indian philosophical literature on education, dating back to more than 5000 years, covers a wide range of conceptual issues and practices. Since education is concerned with human beings, any examination of quality in education must essentially take into consideration the nature and destination of human beings. I shall, hence, deal with nature of human beings, goals and purposes of education, nature and processes of education, and impact and outcome of education. Based on the philosophical underpinnings, we will take the issues of quality in education in schools from an Indian point of view.

Nature of Human Beings

There are several discernible sources where nature of human beings have been described. One viewpoint can be his/her origin. Another is the structural viewpoint – what constitutes a human being? The western theory of evolution of man is the biological evolution from single cell organism to the current form of man/woman through several stages of development, immediately preceding

is the ape and chimpanzees. While the western theorists have largely limited themselves to the biological evolution, Indian viewpoint contributed a more holistic concept of evolution – evolution of the mind and consciousness with body as the host. This evolutionary theory also promises rising to the cosmic consciousness, supra-cortical consciousness, in medical terminology (Mukhopadhyay 1987, Jitatmananda, 1991).

Another view regarding origin of man/woman is that Lord Brahma, the Creator of this universe, wished, “*Ekoham Bahushyama*” (I am One, let me be many). This point of view professes human being as child of God – Kahlil Gibran in his legendary poetic work *The Prophet*, told the parents, “child is through you” implying ‘from God’. This contention is more forthright in “*Srinantu Viswe Amritasya Putraha*”. Thus, every human being is an incarnation of God; indeed, a constituent of the Total Consciousness. Swami Vivekananda argued unless each one is part of the whole and in continuous communication, how else can one transfer the thought to another?

This role and place-definition of human beings in the total cosmic design is consistent across all religions. According to Islam, human being is the God’s viceroy on earth. According to Sikhism, God is the soul of man, his eternal nature; Man is God’s workman on earth is the contention of Christianity (Ghai, 1996). Now, attribute of God is Perfection. Perfection implies completeness (*purnattwa*), the attribute of *Brahman* or God. To quote from the Ishopanishad:

“Om Purnamadah, Purnamidam, Purnat Purnamudachyate
Purnasya Purnamadaya Purnamevavashisyate”.

(— *Ishopanishad*.....)

[That (the Absolute Self) is full. This (the world we experience through our mind and senses) is full. If This fullness is taken away from That fullness, what remains is full.

English rendering by Swami Jyotirmayananda]

Thus, in a way, the nature of human being is seen as potential perfection, nearer God. Sri Aurobindo’s philosophy, particularly the concepts of superman and supramental contributes to similar understanding of human nature. Indeed, humans are born in a divinity-animality continuum (Mukhopadhyay, 1999). Animality or beastliness is indicated by tendency of accumulation — enlarging the material possessions in deprivation of others. The Divinity is indicated by sacrifice — foregoing material benefits for others at the cost of self. Lord Jesus or Guru Tegh Bahadur’s lives are some of the best examples. In our times,

Martin Luther King, Mahatma Gandhi, Mother Teresa are the examples of Divinity. According to Vedanta and Sri Aurobindo's philosophy, with every life, human endeavour is to move from the relative position in the animality-divinity continuum towards divinity.

The second framework for understanding nature of human beings is by its structure. Two important references from the angle of education are *Charak Samhita* and *Kathopanishad*. One dimension is that human beings are multi-plane configuration (Fig 2.1). They live simultaneously in physical, mental, intellectual and spiritual planes. Here, the word spiritual does not refer to any religious concept, instead it refers to the spirit that has guided the humans throughout the history of civilization to explore and conquer nature – nature external to the physical frame of the human being as well as his/her own internal nature.

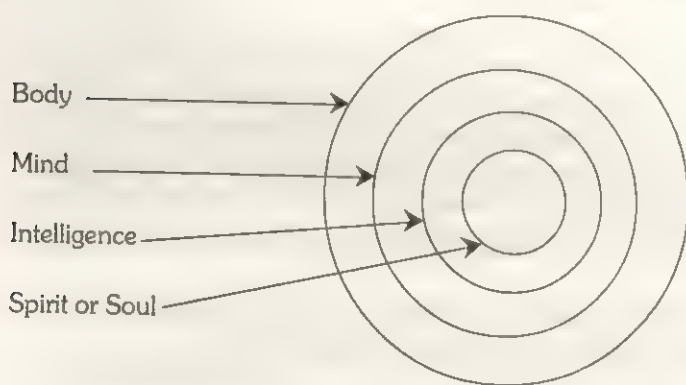


Figure 2.1. Multi-plane configuration of humans

In depicting the structural nature of human beings, particularly from the angle of education, role of sense organs has been highlighted by several western and Indian thinkers. Senses have been defined as the gateways of knowledge. Indian literature mentioned eleven such senses, *Indriyas*; most popularly known are the five senses or *panchendriya*, namely, eyes, ears, nose, tongue, skin. However, Swami Vivekananda (1999), in *Raja Yoga*, drew our attention to the fact that sense organs are active only when linked to the mind. That is why, even with wide open eyes we fail to see when we are engrossed in a beautiful piece of concert, for example. It is not the eyes that see, eyes see only when mind energizes the eyes. Metaphorically, an electric bulb by itself does not emit light; it glows only after receiving the power by putting on the switch. Thus Indian

philosophy attaches great significance to mind.

The third element in the structural thesis of human being is the inter-relationships between senses, mind, intelligence, body and the self or soul. *Kathopanishad* describes the relationship beautifully in The Parable of the Chariot:

*Atmanam Rathinam Viddhi, Sariram Ratham Eva Tu:
Buddhim Tu Saradhim Viddhi, Manah Pragraham Eva Ca.*

*Indriyani Hayam Ahur Visayam Tesu Gocaran
Atmendriya-Mano-Yuktambhoktety Ahur Manisinah.*

*(Katha Upanishad, 1.3.3 Transliteration into English by Dr. Sarvapalli
Radhakrishnan, 1998)*

"Know the self as the Lord of the Chariot and the body as verily the chariot, know intellect as the charioteer and the mind as verily the reins.

The senses, they say, are the horses; the object of the sense the paths (they range over); (the self) associated with the body, the senses and the mind — wise men declare is the enjoyer". (English rendering by Radhakrishnan, 1998)

The subsequent slokas in the parable emphasize on the ability and efficiency of the mind to control the senses that either lead to destination and goals or dissipate the total energy. Education is training the senses (horses) to be receptive and sensitive, mind to control the senses, intelligence to be discriminative to give right direction, and body to be able to host the self – the one that is part of the Total Consciousness. Yet another depiction of human nature is in terms of three qualities or Triguna-Tattwa — *Tamas* (idle or inert, narrow), *Rajas* (active, dominating, adventurous) and *Sattwa* (enlightened, quiet) as qualities or states of mind and intelligence. This has been elaborately dealt with in *Srimad Bhagavat Gita* interpreted by Paramhansa Yogananda (Yogananda, 1998). Should we appreciate the basic spirit of the depiction of human nature and constitution, quality in education is manifest when it educates the mind to take charge of the senses, intelligence to be able to discern the good from the bad, to recognize body only as host of the self, the soul; quality in education is when education helps human to move from *tamas* to *sattwic* stage.

Education and Its Purpose

As mentioned earlier, one important landmark of quality in education is goals of education. Do we know what kind of product we need from education? If

we define them as engineers or clerks, we are defining only one, though significant, domain of the product quality – the technical and economic skills. Same individual will grow to be a father or a mother, a husband or a wife, a brother or a sister, a neighbour, a member of the social and political systems. He or she is born with potentialities. The quality in education has hence to take into consideration the individual goals in the larger context of social goals. Further, just any goal is not enough. It is equally important to examine the worthwhileness of the goals. We need to review the issues in quality in education with reference to goals. Hence, first and foremost is to understand the nature of human beings and their propensities.

Swami Vivekananda described purpose of education as manifestation of perfection already in man. The point of focus, here, is 'perfection already in man'. From the paradigm on the nature of humans portrayed above, the purpose of education becomes comparatively clearer. Vivekananda's contention, purpose of education is manifestation of the perfection, represents the best in this paradigm. The contention of the International Commission on Education for the 21st Century about goals and purposes of education mentioned earlier conforms to the purpose of education as manifestation of perfection already in man (UNESCO, 1996). Indeed, Learning 'to Be' and not 'Become' is realizing the perfection already in man (woman).

Education: The What and How

Education, in India, has been defined in several texts. It has been defined in terms of the process, relationship between the teacher and taught, as well as in terms of its impact. Firstly, knowledge, *Vidya*, is classified into two broad categories, namely *paravidya* and *aparavidya*. *Paravidya* is the direct knowledge through experience and perception (often extra-sensory) achieved through *sadhana*. *Aparavidya* is the indirect or *paroksha gyan* achieved through secondary sources often through sensory mechanism. *Aparavidya* is also termed as *avidya*. What we learn in schools and colleges are classified as *aparavidya* or *paroksha gyan*. Further, *paroksha gyan* has been termed as *Vigyan* and *pratyaksha gyan* as *Gyan* in the *Gyan-Vigyan Yoga* in *Gita*. Having looked at the nature of *vidya*, let us now turn to the process, how does learning happen?

Shikshaballi in the *Taittiriopanishad*, depicts education as:

Acarya Purva-Rupam, Antevasy Uttara-Rupam, Vidya Sandhi, Pravachanas Samdhanam, Ity Adhividyam. (Taittiriya Upanishad, I.4.1)

"the teacher is the prior form; the pupil is the later form, knowledge is their junction; instruction is the connection" (Radhakrishnan, 1998). Important, it does not accept the contemporary view of transfer of knowledge from teacher to student as education. Instruction is the connection and knowledge is the junction. This view gets further strengthened in another sloka:

*"Saha Nababatu, Saha Nau Bhunaktu Saha Biryā Karababahai
Tejaswinavadhita mavastu Ma Vidwisabahai".*

Invoking God to bless both the Guru and the disciple to learn together, and that one does not become jealous of the other. This, in a way, professes for learning together, does not see Guru as the storehouse of knowledge, instead only as purva-rupam or an advanced learner. It emphasizes on importance of continuity of learning which was also reflected in Rabindranath's writings about teacher, 'a candle that does not continue to burn itself, cannot lit another'.

On the issue of method of learning with quality, two important formulations are worth quoting. One approach talks of four stages to quality learning:

1. You learn when you listen to the teacher,
2. You learn when you study,
3. You learn when you teach,
4. You learn when you apply.

The four-stage learning indicates firstly, that any one source is not enough. Secondly, it offers a taxonomy of learning – as one moves from listening to application, indeed one moves from lower level of cognition, namely knowledge to comprehension (study and teach) and application, as depicted in the modern pedagogical literature (Bloom's taxonomy).

The second formulation is the multi-channel learning paradigm professed in the Hastana Satak of the great epic Mahabharata:

*Acaryat Padamadatte
Padam Sishya Swa-Medhaya
Padamekam Swa Brahmachirivui,
Padam Kalc Kramena Hi.*

A quarter of the learning accrues from the teacher, quarter from *self study* and talent, one quarter is derived from *interaction with peers* and rest with time

through experience (emphasis added by author). Once again, quality in education is to be achieved through multi-channel learning.

Quality in education has also been depicted in terms of its impact. Most oft-quoted and apt is *Sa Vidya Ya Vimuktaye* (that is education which liberates – liberates from the bondage of *agyan* and *avidya*). Another depiction of impact of education is *Vidya Dadati Vinayam* (education inculcates modesty). Third impact of education is that with education, one is able to differentiate between *para*vidya and *apara*vidya (or *avidya*). Indian society attaches significant value to such qualities; hence quality in education is also depicted by its impact on the individual.

School: Quality in Education

The search for quality in school education has been a major area of philosophical and intellectual entrepreneurship in India. The Vedantic concepts have been the main ingredients of contemporary Indian philosophers in education, namely, Gandhi, Aurobindo, Rabindranath, Vivekananda, Dayanand Saraswati, J. Krishnamurthy, and others. Necessity for philosophical underpinning for quality in education is equally shared by other religions in India. The Christianity provides sound philosophical basis for education in the Christian Missionary Schools. The Sikh philosophy guides the Guru Harkrishan Public Schools and the schools run by Gurdwaras. The Madrasahs and Maktabas provide education based on the philosophy of Islam.

Quality in education necessitates strong philosophical underpinnings depicting what we want to achieve through schooling. All these schools are not only high quality in conventional terms but are qualitatively different from other institutions because of their philosophies that run through the nervous system of the school.

Most common element in such qualitatively different schools is approaching the development of human being as a whole through value-based, rather value-centric education. Human being is a value configuration, rather than a robotic knowledge configuration. Thus, education without anchoring in human values is incomplete and is likely to create 'one-dimensional man' and woman. Education is the most powerful means of modification of human behaviour. Human behaviour is depicted by a series of choices or preferences. For example, to earn money through socially sanctioned means or unscrupulous ways, to be truthful or acting according to convenience, to share resources with others or consume to one's own personal satisfaction, etc. are preferences within a larger behavioural choice matrix. Values guide such personal choices; hence quality education is value based that approaches the development of the total human being – indeed, 'learning to be'.

Continuing the argument further, there are variations among the students. Quality education, focusses on identification of the propensities of each individual and nurturing such propensities for holistic development of the individuals. Mirambika, a school set up by Aurobindo Ashram is an outstanding example, where every child creates his/her own curriculum. The school that nurtures each child to optimize his/her potential, instead of converting all of them to uniform industrial product offers quality in education.

Just as students represent a unique personality and vary from one another, each school has a personality of its own and varies from one another. Looking at every school as a product of industrial line function is fraught with risk. For offering quality in education, each school must optimize on its potential. Every school has certain manifest quality that is known and recognized. Often, the manifest quality is wrongly equated with quality itself. Besides the manifest quality, each school possesses a rich untapped potential quality. The total quality is the function of manifest quality and optimization of potential quality. When a school is engaged in exploring its potentialities (Opportunities in the language of SWOT Analysis), it can claim to offer quality in education.

By an extension of the argument, this exploration is a continuous process. It is a never ending journey. Thus quality in education is also depicted by continuous search for improvement. But as Holt (2000) warns, improvement is not enough, it is necessary to innovate. The quality in school education is characterized by continuous search for improvement through innovative approaches.

From a contemporary standpoint with strong bonds with the philosophic approach to quality in education, quality in education can be depicted in terms of the product of the system – the qualitative attributes of Educatedness. Individuals can be placed on a taxonomy of Educatedness (Mukhopadhyay, 1999).

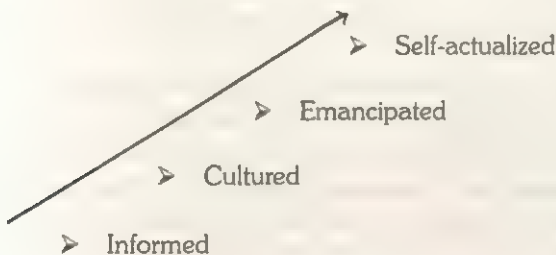


Figure 2.2. Taxonomy of Educatedness

Informed: The lowest in the hierarchy is being informed – either through formal education or through informal processes. Information are bits of facts, figures, concepts, etc. These bits are not necessarily interrelated. Knowledge is in the organized form where information is woven into a meaningful pattern, a configuration. Hence one of the first purposes of education is informing and processing information into the form of organized knowledge. But this is only the first stage.

Cultured: The second level is the level of being cultured. Culture has metaphorically, been described as the light that emits out of a diamond, and not the diamond itself. In humans, culture represents an individual in his or her totality. Hence, it is much more than knowledge. It represents an integrated personality that is well rounded, that emits warmth and human values. It is manifested by the way an individual treats himself or herself, other human beings, animals, plants, places, objects, and the like. It is the totality of the person. For example, a well dressed person who unhesitatingly litters a railway platform or airport with cigarette butts may be qualified but not necessarily cultured. Acharya Vinoba Bhave's concept of *Prakriti* (Nature), *Vikriti* (deformity or distortion) and *Sanskriti* (culture)¹ represents this concept very well. Purpose of education is to culture the individual – develop the *sanskriti*.

Emancipation: One level ahead of culture is emancipation where individuals rise above the known artificial boundaries of religion, caste, creed, gender, linguistic and geographic belongingness, social mores, cultural traditions and forms, etc. A person born in a particular linguistic group can be proud of his or her language and heritage with equal respect and appreciation for the national heritage and diversity of India. One can simultaneously be a proud Indian and member of the international community. This is basically achieving freedom from the strangleholds of ignorance, intolerance, etc. Purpose of education is to liberate — *Sa Vidya Ya Vimuktaye* – (*what liberates is education*)

Self-actualization: The last and the final level is self-actualization where emphasis is on achieving the best of the potential already in the individual. We live simultaneously in four planes – physical, mental, intellectual and spiritual. These four stages are not independent of one another. They are integrally linked. Unlike the western tradition, where self-actualization implies optimization of talent (intellectual and creative abilities), emphasis here has to be on holistic

¹ Acharya exemplifies that when a person eats when hungry, that is *prakriti* – nature; when he/she eats despite full and not hungry, that is *vikriti* – deformity; and when a person, despite hunger gives away his/her own food to another hungry person, that is *sanskriti* – culture.

development — Vivekananda's concept of 'perfection already in man' is also an indicator towards the same direction. Delors' Commission echoed similar proposition when it mentioned that the humans live in physical, intellectual, emotional and spiritual planes. Self-actualization will imply achieving the best in all the four planes of life.

Thus, quality in education can be indicated by Educatedness of the products of the school; being informed at whatever level of excellence is not enough, at best the first step in being educated.

Conclusion

The quality of education is determined by the kind of humans it produces. In education, where shaping of the person takes place, quality is a more holistic concept. Humans are a value configuration; knowledge provides the outer coat to the values. It is the values that determine what to do with the knowledge, whether to use the knowledge of nuclear science for producing nuclear war heads or nuclear medicine. It is the value of the scientist that will determine his or her choice of application of his/her knowledge. Human as knowledge configuration is robots. Drawing from the taxonomy of educatedness, mentioned above, such inputs and processes that ensure development of culturedness, emancipation and self-actualization of all aspects of human potential indicate quality in education. Quality in education cannot be restricted to the supplier specification and even apparent customer satisfaction in terms of employability. There is the inner world in human life; quality in education includes processes that nurture the seeds of inner development. On the organized institutional framework, quality in education is offered by schools that recognize the variations and nurtures individual propensities, and the school that continuously explores to optimize its own potential.



Total Quality Management in Education

Introduction

Quality and urge to reach greater heights have been a perennial human quest since ages in all communities, all societies and nations also, in all endeavours of life. Although concepts like quality control, quality assurance, quality management, quality circle, and total quality management have been pronounced and copyrighted in the western world, emphasis on quality has been an Indian way of life since time immemorial. *Chhandyogya Upanishad* called upon the humans to do whatever they did with skill – indeed, quality in all actions. In *Kathopanishada*, Nachiketa asks for the highest form of learning, the theory of soul, from Yamaraj. Yamaraj, to test his keenness for learning, offers Nachiketa all the wealth and beauties in the world. Nachiketa remains unmoved. Yamaraj offers him, then the highest knowledge, and also prays that only such students should come to him. Early Indian universities – Takshasila in the Brahmanic period and Nalanda in Buddhist period were known only for excellence (Das, 1986). There was no place for mediocrity. In *Srimad Bhagavat Gita*, Lord Krishna advised the great warrior and master archer Arjuna, that “*Yogaha Karmasu Kaushalam*¹” – search and endeavour in achieving quality at work (*Karmasu Kaushalam*) itself is *sadhana* or the way to unite with God. Should the ultimate goal of human life be considered as subsumption into the

¹ *Buddhiyukto Jahatiha Uuve Sukritaduskrite*

Tasmad Yogaya Yujyaswa Yogaha Karmasu Kaushalam

■ (Srimad Bhagavat Gita, Sankhyayoga, Sl.50)

Those who possess the balanced intelligence denounce both good and bad works in this life itself. You (Arjuna) get to *Yoga* (effort to commune with God): quality (*kaushalam* – skill) in work (*karma-su*) is *Yoga*.

Total Consciousness or Brahman, there is no better emphasis on quality at work than equating it with Yoga.

Total Quality Management: Concept and Development

Although quality management has been a major area of emphasis and exploration in the industry, the credit for developing a comprehensive philosophy and strategy for 'Total Quality Management' in the contemporary world goes to Deming and Juran. TQM was originally developed by Deming on the basis of his experience before and during the second world war. Deming's TQM, as a philosophy, was largely trialled in Japan with tremendous success in post-war economic reconstruction of Japan resulting in to massive trade imbalance now between USA and in Japan (Crawford and Shutler, 1999). The book, *Out of the Crisis* by Deming, published in 1986 is a landmark. Other outstanding contributors to this philosophy are Juran (1988, 1989), Crosby (1979, 1984) and Ishikawa (1983, 1985). As TQM became popular, several authors contributed to its philosophy, though not without contradictions along with confirmations and reinforcements of certain principles.

Total Quality Management, as a management philosophy and strategy, has now been applied to both industry and service sectors including those in government, education, etc. Tuttle (1994) traced four stages of development of TQM. These are:

1. Awareness and early experiments,
2. Blind following characterized by frenzied activity,
3. Negative skepticism arising out of failures of over-enthusiasm in stage two, and
4. Stage of maturity with continuing momentum but well informed adoption of activities.

Presumably, we are at the fourth stage. In India, however, we are just beginning to realize the potential and at the early stage of experimentation with TQM in education.

Let us review briefly the basic tenets of TQM. It will be worthwhile examining the concept in its original form. There is a debate about the originality of Total Quality Management since there were terminologies like total quality control and the like. Conceptually, TQM is a significantly fresh and dynamic idea. As Oakland (1993) puts it, 'distinctiveness of TQM lies in two major features – a commitment to continuous improvement and involvement of all members of the organization'. The originality of TQM is credited rightly to Deming (1986) who propounded 14 cardinal principles of Total Quality Management (Box 3.1).

Box 3.1. Deming's 14 principles of TQM

1. Create constancy of purpose for improvement of the product and service, with the aim to become competitive and to stay in business, and to provide jobs.
2. Adopt new philosophy.
3. Cease dependence on mass inspection to achieve quality.
4. End the awarding of business on the basis of price.
5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus to constantly decrease cost.
6. Institute training on the job.
7. Institute leadership.
8. Drive out fear so that every one may work effectively for the company.
9. Break down the barriers between departments.
10. Eliminate slogans, exhortations, and targets, asking for new levels of productivity without providing the workforce with the methods to do the job better.
11. Eliminate work standards that prescribe numerical quotas.
12. Remove the barriers that rob people of their rights to pride of workmanship.
13. Institute a vigorous program of education and self-improvement.
14. Put every one in the company to work to accomplish the transformation.

Crosby, incidentally also recommended 14 steps for quality management (Box 3.2) while Juran offered a ten step model (Box 3.3).

Box 3.2. Crosby's fourteen steps

1. Establish full management commitment to the quality program.
2. Set up a quality team to drive the program.
3. Introduce quality measurement procedure.
4. Define and apply the principle of the cost of quality.
5. Institute a quality assurance program.
6. Introduce corrective action procedures.
7. Plan for implementation of zero defects.
8. Implement supervisor training.
9. Announce zero-defects day to launch the process.
10. Set goals to bring about action.
11. Set up employee-management communication system.
12. Recognize those who have actively participated.
13. Set up quality councils to sustain process.
14. Do it all over again.

Box 3.3. Juran's ten steps

1. Create awareness for the need and opportunity for improvement
2. Set explicit goals for improvement.
3. Create an organizational structure to drive the improvement process
4. Provide appropriate training.
5. Adopt a project approach to problem solving.
6. Identify and report progress.
7. Recognize and reinforce success.
8. Communicate results.
9. Keep records of change.
10. Build an annual improvement cycle into all company processes.

A critical examination of the cardinal principles of TQM as enunciated by Deming, Crosby and Juran will indicate a marked shift in emphasis in quality management from product to people. The single most emphasis is on human resource development and capacity building — not only technical capacity, but also the managerial and participative capacity leading to empowerment. TQM calls for a shift from quantitative to qualitative terms of reference for quality improvement. Importantly, emphases are on constancy of purpose, quality consciousness, and continuous improvement as a way of organizational life. The list unveils Deming's emphasis on the management cadre. Poor quality indicates the management failure. Representing figuratively, it will imply:

Structures and Systems > Individual Efforts and Competencies

By implication, structures and systems of an organization have greater role to play than individual efforts and competencies in quality management. This, however, does not undermine the role and contribution of individuals. Instead, individuals should be used productively and not used to patch up basic design flaws (Hormi and Lingren, 1995). Deming exhorts the management through his 14 principles, what to do and what not to do if an organization is to develop.

Juran (1989) reinforced this contention of the importance of the system with his popular 85/15 theory — 85% of the problems that an organization faces is due to systems failure – faulty process design. Only about 10 to 15 per cent failures and problems are due to individuals. Thus, improving quality is synonymous with improving management. Crosby's (1979) contributions are

the theories of 'quality is free' and 'zero-defects'. Recycling cost of wastage is more than enough for achieving quality. It is possible to produce with zero-defect. His second proposition is that the wastage due to poor quality is not necessary.

As mentioned earlier, several authors, other than Deming, Juran and Crosby have made meaningful contribution in either defining or refining the concept of TQM. The main features of TQM have been succinctly summarized by Saylor (1992):

"The Total Quality Management philosophy provides overall concept that fosters continuous improvement in an organization. This philosophy stresses a systematic, integrated, consistent organization-wide perspective involving everyone and everything. It focuses primary emphasis on total satisfaction for both internal and external customer, within a management environment that seeks continuous improvement of all processes and systems. The TQM philosophy emphasizes the use of people, usually in multi-functional teams, to bring about improvement from within the organization".

In Hill and Taylor's (1991) view:

"Essentially, it is concerned with organizational improvement through the identification and solution of problems by groups of employees at various levels in the structure. This problem solving is usually supported by the development of the teams and a focus on corporate goals. However, the teams primarily identify with problems of specific relevance to their own functions in order to engender a sense of involvement in organizational affairs. TQM is a holistic paradigm which recognizes that all employees can make an impact upon the quality of goods and services provided".

In an effort to redefine and or identify attributes of TQM as a management strategy, Yudof and Busch-Vishniac (1996) identified the following:

- Customer focus – 'organizations should listen to whom they serve'.
- Unhealthy and Healthy organizations, in the context of customer focus vis-à-vis internal political processes determining the organizations goals.
- Focus on systemic change – 'good management means devising systems that more fully encompass the entire range of observable behaviour'.
- Implementation through knowledge – linking data to systems view and decision making.
- Active involvement of all employees in the process of change.

The authors contend that despite the requirement of large time investment in TQM, the potential pay off is complete organizational redesign and 'elimination of inefficient and overly complex processes'. Further, the gains in quality and customer satisfaction can be achieved within the given resources, subject to adequate investment in staff development and empowerment.

Thus, the central focus in TQM is customer satisfaction, indicator of quality being the customer response to a product. With this central focus on customer satisfaction, TQM sets out to develop an organizational philosophy and management strategies to achieve the philosophy. It sets an organization on a trajectory in search of new heights with a predefined set of corporate goals on a continuing basis indicating consistency of purpose with the involvement of all, where people in teams are in continuous search for self-actualization, the organization strategically invests on capacity building and empowerment with increasing decentralization of decision making on facts and figures through mentoring leadership roles in various areas of organizational functioning. Emphasis is on people – external and internal customers, and the organizational processes.

From the definitions of Saylor, Hill and Taylor, and Yudof and Busch-Vishnac, the following emerge as some of the attributes of TQM:

- Corporate Goals,
- Continuous Improvement,
- Consistency of Purpose,
- Problem Solving,
- Involving Everyone,
- Involving Everything in the Organization,
- Customer Satisfaction, and
- Multi-functional Teams.

Assessment of Impact

There have been some interesting debates on efforts to measure impact of total quality on organizations. US General Accounting Office (1991) was one of the first to study the issue of impact. GAO provided performance measures in four categories (Table 3.1).

Table 3.1. Performance measures in TQM

Employee Related Indicators	Operating Indicators	Customer Satisfaction	Financial Performance Indicators
<ul style="list-style-type: none"> Employee Satisfaction Attendance Turnover Safety Health Suggestions Received 	<ul style="list-style-type: none"> Reliability Timeliness of Delivery Order processing time Errors or defects Product lead time Inventory turn over Costs of quality Cost savings 	<ul style="list-style-type: none"> Overall customer satisfaction Customer complain Customer retention 	<ul style="list-style-type: none"> Market Share Sales per employee Return on assets Return on sales

There are two sets of messages that emanate out of the table: (i) Areas of Indicators of Success of TQM – indicators related to Employees, Operations, Customer Satisfaction and Financial Performance, and (ii) Indicators of Success in each area.

This is a useful tool, for it elaborates and lists details of the indicators. It uses direct as well as indirect indicators. For example, in case of Employee Related Indicators, it uses turnover and suggestions received as indirect indicators along with employee satisfaction as direct indicators. Similarly, customer retention is an important indirect indicator where overall customer satisfaction is the direct indication of quality management. The Operating Indicators provide a meaningful set of process control mechanism for quality assurance.

TQM in Education

Gurukula System of education was probably the best example of quality management in education. In the Gurukula (Guru Kula means Preceptor's family) system, students lived with the Guru in his family till the time they completed their study. There are several implications of this internship in Gurukula:

1. Guru chose the student on the basis of the learning potential. The test for admission was not necessarily based on intellectual quality. For example, when Satyakam approached Guru Gautam for admission, Guru Gautam asked his Gotra (caste). Satyakam mentioned that his mother had told that she got him (Satyakam) by serving many people in the youth; so she does not know his Gotra. This dangerous truthfulness was enough indication for Guru Gautam to assess Satyakam's Gotra. The Guru asked Satyakam to get *Kusha* (one specific variety of grass) and get ready for initiation.

2. Guru decided the curriculum suited to the individual disciple's talent, interest and ability – optimizing human potential.
3. Disciples saw the Guru in all facets of his life – Guru's life as the open book for value modelling.
4. While living in the Guru's family, disciples shared the household work – learned life skills in holistic living where education was not preparation for life but part of living itself.
5. A disciple could leave *Gurugriha* (Guru's House) only when the Guru was satisfied that the disciple has completed his learning – there was no grade or class, emphasis was on mastery learning.
6. There was no discrimination among the disciples by the Guru – young Kach was sent by the Gods to be trained under Guru Sukracharya who was Guru of the *Danavas*. Yet, Guru Sukracharya gave his full wisdom to Kach.

The list can be elaborated. What is important to note is the emphasis on all round development of the students, highest quality in performance, and challenging every disciple to achieve his/her best.

The *Gurukula* tradition of total quality was successfully transferred to the early Indian universities like Nalanda and Takshasila. About admission in Nalanda, Hiuen Tsang says, "If men of other quarters desire to enter the keeper of the gate (*Dwarapandits* – scholar gatekeepers—, as they were called, emphasis added by authors), proposes some hard questions; many are unable to answer and retire. Those who fail compared with those who succeed are as seven or eight to ten" (Beal in Das 1986). Similarly, studies in Takshasila were not only diverse but of highest form and quality (Das, 1986). In *Chhandogya Upanishad*, the highest form of learning, *Para Vidya*, has been recommended. This emphasis on quality in education was lost during the medieval and the modern colonial period.

It should be evident that quality was a culture of the *Gurukula* tradition. That each learner received different instruction as per his or her capability, potentiality and interest indicates on one hand differentiated instructional design (Mukhopadhyay and Parhar, 2000) and 'customer focus' on the other.

Ancient Indian experience, however, was limited to the micro-institutional framework. With the ushering in of democratic values and education as a human right, the issue is of education for all. Challenge is education of the millions.

With the new world order depicted by globalization, the renewed challenge is not only of quantity but also of quality, indeed total quality in education. Total quality management as an approach offers a significant opportunity for its adaptation to improve educational quality in a holistic manner. Let us examine the feasibility of adapting TQM in modern post-colonial Indian educational setting.

Deming (1986), in the Preface of his book, *Out of the Crisis*, mentioned that TQM can be applied equally well in service sectors, emphasizing "government service – education and the mail". The applicability of TQM in education drew significant attention of many authors such as DeCosmo et. al (1991), Edwell (1993) Sherr and Lozier (1991), Bonser (1992). They pointed out that educational institutions have turned to TQM for many of the same reasons the businesses have instituted quality programmes (Kwan, 1996). According to Bonser, the move towards TQM in higher education is due to the escalating number of students, the lack of consistent leadership style, the increasing accountability to the public and changing attitude towards universities. These pressures demand peak quality performance from universities in all areas of endeavour. Approaches that were considered adequate, are no longer so. DeCosmo et al. also explained that the intensifying adaptation of TQM philosophy in education was due to resource constraints and increasing pressure.

Motwani and Kumar (1997) did an extensive review of literature on applicability of TQM to academia. The review brings both the enthusiastic responses to TQM as well as skepticism about it. There are good number of books on the subject indicating its growing popularity as a method of institution building. Authors differed on their version of approach to implementing TQM, though the philosophy remains more or less unchanged.

Sherr and Lozier (1991) contended TQM as an alternative to many of the management practices in education. 'TQM is a style of management that has worked for several decades overseas and is receiving growing attention in the United States'. TQM professes a systematic approach to operation, not random approach. Emphasis is on continuous improvement of quality. In this context, Shewhart's (1931) Plan-do-check-act (PDCA) cycle offers a scientific method for continuous process improvement.

Tuttle (1994) makes an interesting analysis of the reasons for adoption of TQM in institutions of higher education. He broadly classifies the reasons into external and internal forces. In his assessment, the bedrock of these two-fold pressures

emerge due to reduction of public funds. This leads to --

- Difficulties in recruiting outstanding new faculty and retaining existing faculty.
- Competition among institutions for faculty becomes another external force.
- Competition for students – both initial enrolment and retention -- becomes third force with a long term implication: quality education leads to increased student referrals, hence increased enrolment.
- Donors demand accountability – 'corporate funders may explicitly ask an institution to discuss its quality management process as a condition for the receipts of funds'.
- TQM is an instrument for competing for corporate funding.
- Employers' prefer entry level employees with basics in TQM.

Internal forces are --

- Increase in productivity in teaching, administration and support functions.
- **Shared governance.**
- Poor teacher morale due to reduced funding.
- Effect of low faculty morale on students including higher tuition and hostel fees.

Beyond the general argument of applicability of TQM in education, it is necessary to review the basic principles of TQM as developed by several authors as described above, and their adaptive-potential in education.

There is a significant difference between application of Deming's and Crosby's TQM philosophies to education. Crosby's zero-defect theory will lead to tuning the teaching learning process firmly to eliminate failure in examination. Besides, conforming to a static standard, this will also imply subjugation of schooling process to examination results as the ultimate goal. According to Deming's philosophy, examination is a means to an end, not an end in itself. Emphasis is on the system to strive for continuous improvement of quality. Crawford and Shutler (1999) made an interesting and useful comparative analysis of application of TQM in education proposed by Crosby and Deming.

Sherr and Lozier (1991) pictured TQM as a three-dimensional model, three dimensions being design, output and process. Further, elaborating on the TQM theory as applied to education, authors chose five areas for focusing:

1. Mission and customer focus,
2. Systematic approach to operation,
3. Vigorous development of human resources,

4. Long-term thinking, and
5. Commitment.

The growing interest in TQM is evident from the fast growing rich literature on the subject. As to the 14 cardinal principles of TQM as enunciated by Deming, it will be worthwhile examining the implications of each of these principles for education. (Table 3.2).

Table 3.2. Deming's propositions and implications for education

Deming's Propositions	Implications for Education
Create constancy of purpose for improvement of the product and service, with the aim to become competitive and to stay in business, and to provide jobs	Even if the institutions do not need to become competitive and stay in business since it is seller's market, institutions ought to improve on a continuing basis because of explosion of knowledge and changing styles in learning. Institutions need to develop long and medium term perspectives for development and move towards that.
Adopt new philosophy	Quality is a continuous journey; make it part of the institutional mission. Educational implication is adoption of a new philosophy and consequent approach for holistic development of students e.g., building education on four pillars of learning (UNESCO, 1996).
Cease dependence on mass inspection to achieve quality	Replace external inspection by continuous internal mechanism of quality assurance.
End the awarding of business on the basis of price	Opt for best available teachers and instructional resources for affordable price; not for the lowest price.
Improve constantly and forever the system of production and service, to improve quality and productivity, and thus to constantly decrease cost.	Constantly improve instruction, student assessment and management to improve quality and reduce the cost by reducing wastage.

Continued

[illegible]

...the teacher's role is to create a safe and secure environment for the students to learn and to provide a supportive and encouraging atmosphere for the students to learn.

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Experimental Application of TQM in Education

From the analysis of the contributions of Deming, Juran and Crosby, it is evident that TQM has significant implications for education. There has been considerable work on trialing the concept and practice of TQM in education.

Hansen and Jackson (1996), in an experiment, applied Total Quality Management (they called it Total Quality Improvement) in classroom. They applied the principles of customer focus (students), Team Process (student involvement) and continuous improvement. The researchers concluded,

"The TQI approach changed the role of the teacher . . . With multiple objectives, . . . The instructor becomes a manager of resources rather than an oracle on the podium. . . ."

Second lesson is how scarce, and hence how valuable, the time of students is. . . the scarcest resource to manage was students' time and good will"

Cole (1995) experimented with application of Total Quality Management in faculty selection. He concluded that application of TQM resulted in improved processes in optimizing job definition and improvement of recruitment methodologies creating better alignment between faculty needs and expectations.

University of Maryland developed Strategic Performance Measurement Methodologies (SPMM) through identification of key result areas (Tuttle, 1994) for determining whether Total Quality Management is working in the universities or colleges. In SPMM methodology, financial measures like value added and value lost per graduate and non-financial measures like customer satisfaction and operational indicators were developed. It would be interesting to review the thesis on comparative indicators in 'private sector indicators' and 'higher education indicators' (Table 3.3)

Table 3.3. Comparative indicators in private sector and higher education

Private Sector Indicator	Higher Education Indicator
<ul style="list-style-type: none"> • Customer Retention • Product Development • Cycle Time • Unit Cost • Warranty Cost 	<ul style="list-style-type: none"> • Graduate rate • Number of months needed to launch a new course • Cost per credit hours delivered • Alumni

Source: Tuttle, 1994

In this table, Tuttle has made one-to-one correspondence between indicators in private sector and higher education. Indeed, rate of graduation can be nearest to customer retention as much as unit cost can be compared to cost per credit hours delivered, or cost per unit of class (Mukhopadhyay, 2000) as well as cost per graduate. Most imaginative comparison is the warranty cost with that of Alumni.

Adaptation of TQM in Education

Deming claimed relevance and applicability of TQM in education. Several experiments on TQM in higher education have substantiated his claim. Yet there are skeptics who doubt the applicability of TQM in education. Sherr and Lozier (1991) mention, "We need to step back and ask whether our universities are doing all they might to help the country address its most important problems — leading competitiveness, poverty, inadequate public education, environmental hazards and many more". The question has perfect resonance in all the countries including India. Further, it is not just the universities, the question is equally relevant and pertinent to educational institutions at all levels.

By all evidence, however, TQM is applicable in education. There may be need to adapt the concepts of TQM for application in education. For example, central issue in TQM is customer focus. In education who is the customer — student or parent or employer or provider (government) or all of them? May be, all of them. Society being the main provider of education, assessment of quality in education cannot be restricted to need of the students; it must take into account the perceived needs of other constituents, namely, parents, community, government and employers. Powar and Panda (1995) argued "that an institution of high quality efficiently and effectively meets its stated purpose(s) or mission(s) developed taking into account the clients' stated as well as implied needs".

Chaffe and Tierney (1988) identified nine areas of sensitivity that provide a broad context within which to consider application of TQM. These areas include:

1. Fine internal contradictions
2. Develop a comparative awareness
3. Clarify the identity of the institution
4. Communicate
5. Act on multiple, changing forms
6. Treat every problem as if it has multiple solutions
7. Treat every solution as a fleeting solution
8. Look for consequences in unlikely places
9. Be aware of any solution that hurts people or undermines strong values.

Frazier (1997), in his effort to draw the "Roadmap to Quality Improvement" mentioned eight organizational processes, other than customer focus, that are critical to the success of Total Quality Management in Education:

- The first and the foremost is the *systems thinking*. Since a student is a comprehensive product of intellectual, mental, emotional, physical and moral developments, it is necessary to develop a systems thinking. Also, every institution is comprised of several departments and components that are inter-related and interdependent in their functions. For Total Quality Management, it is necessary to think of school as a comprehensive system.
- The second proposition is *management by fact* in contradistinction to management by impressions and perceptions. In fact, day-to-day experience will indicate that there are wide gaps between perceptions and facts. Since the emphasis is on specific target oriented approach, it becomes necessary to ascertain facts and take management decisions on facts.
- The third component is the *team work*. Since TQM's emphasis is on totality and work culture, it is necessary to develop team work to enrich the experience and the vision, and internalize the quality culture through team work.
- Linked to the concept of team work is *participatory management*. Since the focus is on customer or the beneficiary, there are internal supplier-customer bonds. In such a scenario, participatory management becomes an important requirement for TQM.
- TQM rests on the shoulders of staff, hence *human resource development* on a continuing basis becomes the necessity.
- Since, TQM essentially looks at continuous improvement, Frazier emphasizes on *continuous process improvement* for improving the management.
- The need for continuing process improvement is linked with *long-term planning*. Hence, TQM approach demands long-term planning for the institutions that can be spelt out in medium and short-term plans.
- The last but the most critical among the eight factors or processes is *leadership*. The concept of leadership transcends beyond situational leadership and moves over to transformational leadership.

Thus, Frazier delineates a road map for adaptation of TQM for application in educational institutions. The most fundamental question in understanding and

applying TQM in education is continuous search for quality at personal, group, institutional and societal levels. Kaufman and Zahn (1993) emphasized on the need on mega, macro and micro perspectives. Kaufman (1992) raised some important questions vis-à-vis each of these levels.

Box 3.4. Organizational questions all educators must ask and answer

Societal/Mega

- 1 Do you care about the success of learners after they leave your educational system and are citizens?

Organizational/Macro

- 2 Do you care about the quality – competence - of completers and leavers when they leave your educational system?

Small Groups or Individual/Micro

- 3 Do you care about the specific skills, knowledge, attitudes and abilities of the learners as they move from course to course, and level to level?

Operational/Process

- 4 Do you care about the efficiency of your educational programmes, activities, and methods?

Inputs/Resources

- 5 Do you care about the quality and availability of your educational resources, including human, capital, financial, and learning?

Evaluation

- 6 Do you care about the worth and value of your methods, means and resources?
- 7 Do you care about the extent to which you have reached your educational objectives?

The response to these questions can significantly alter our perception about our own institution and lead to developing alternative path for quality management. The questions raised above are not only on mega, macro and micro dimensions, but also cover elements of input, resources, processes and evaluation.

TQM is an exhortation in improvement of management for institutions to prosper. This cannot be done through piecemeal approach. It needs a systemic thinking

and a consciousness and culture for quality. Quality is no more a desirable element but a necessity in the competitive world particularly when the cost of quality can be zero. There are serious implications of these theses developed in industrial world for the service sector organizations including education. Given the Indian scenario where education is not market driven, quality is not a criterion for survival, since inter-institutional competition is restricted to few. Nevertheless, should accountability to public money be a serious issue, TQM offers an important opportunity for resource-starved educational institutions to improve quality without investment. The National Assessment and Accreditation Council (NAAC) of India, for example, has been set up by the UGC to assess all universities and colleges against certain predefined criteria with relative weightages, known to the institutions of higher learning. The state support to the universities and colleges will now be linked to their ability to manage quality.

There are significant potentialities that TQM can offer to education. Firstly, TQM offers a justification and a technique for continuous search for quality and excellence. Secondly, it develops willingness and hence a culture for change; related to that, the organizations learn to be more flexible and responsive. Thirdly, TQM makes qualitative shift in decision making — first on the location of decision making by active participants irrespective of their levels in the hierarchy of the organization rather than concentrating on top of the hierarchy, and second on decision making based on facts. Another contribution of TQM is the shift from external to internal measures of performance (Yudof and Busch-Vishniac, 1996).

TQM and Indian Schools

Thus, the TQM as a management philosophy and its associated strategies are applicable to education in Indian schools. Navaratnam (1997) makes a forceful statement on quality on the basis of his personal experience. On the basis of his initial experience in primary education, he was able to differentiate between 'good' and 'not so good' school; and he changed his school. In his own statement, "I knew then that only well managed schools could provide quality education. My knowledge and experience tell me that a managed education means a quality education. My perception of quality was represented by school facilities, teachers, principal, fellow students, learning materials, teaching methods, assessment and technology as well as the surrounding economy, community and the political system. ... I also perceived that every school and its system could provide a quality education, but some did and others did not". While explaining the need for quality management, the author links the pressure on the manufacturing and service industries to become innovative and globally

competitive and consequent demand on educational systems from the school to the university to provide appropriate education and support services. The educational support is not only needed for the current situation but also for the anticipated future.

Indian educational scenario is a curious mix of modernism and tradition; internationally comparable (international baccalaureate) quality schools co-exist with extremely poor quality; a miniscule buyer's market in an otherwise colossal sellers' market; a massive network of schools with less than 40% of the relevant age group participating in education. We need to examine relevance and adaptability of TQM in Indian schools in that context. Our more than 112,000 secondary and senior secondary schools can be classified into a few categories:

Table 3.4. Types of schools in India and quality

Type of Schools	Quality	Funding	Approx. Number of Schools
English Medium private Schools	Majority having been able to set standards	Total cost of education + through student fees	About 5,000
Centrally sponsored schools – Kendriya Vidyalayas, Navodaya Vidyalayas, Sainik Schools, etc.	Have set standards	Either free or heavily subsidized by Union Government comprehensively covering staff salary, infrastructure, instructional resources, other development related costs, etc.	About 1,700
Government or Government Aided Schools	Enormous variation in quality – large majority offering poor to very poor quality of education	Free or subsidized largely covering salary cost with negligible investment on infrastructure, instructional resources, other items of quality.	105,000

It is often construed that quality is the function of per capita expenditure. There is a belief that quality management has been possible in the private unaided schools because of high cost. Empirical studies, however, indicate comparable per capita institutional cost. In 1990-91, per capita institutional cost in Kendriya Vidyalayas, State Government Schools and Unaided Schools were Rs.904.52,

Rs.1019.04 and Rs.747.63 respectively (Aggarwal, 1991). In fact, per capita institutional cost is low in private unaided schools. This brings back Navaratnam's thesis that quality education is managed education. A large majority of Indian schools is not offering managed education.

More than 94% schools are run almost at the cost of staff salary (95% is the salary). As a sellers' market, there is hardly any pressure for quality. Illiterate and semi-literate parents are not particularly familiar with financing of education from the taxes paid by them who perceive it as free – dole. Hence, the schools skirt accountability. With the changing face of economy, production and service industries, however, the pressure is building up for improving quality. Also, the pressure is due to the cost of wastage in education.

There is an increasing awareness among parents who pay for their wards' education in private schools about their rights; this is indicated by activism of parents' forum in development of curriculum framework, litigation on enhancement of fees and school facilities, etc. Recent reports indicate growing demand for education (PROBE Report, 1999). More than 300 million strong Indian middle class is prepared to buy good quality education. This is indicated by the increase in private cost of education, particularly parent investment on private tuition for coaching of their wards. Writings on the wall are clear that parents will be prepared to pay for good quality education; if state cannot offer, they will choose alternative means. All these developments and reduction in availability of funds lead to higher social accountability of education. The TQM concept of customer focus is a mechanism of establishing a functional accountability system in education. Who is the customer is a wide open issue.

Despite the customer focus, accountability cannot be developed in a day. It needs long term perspective, hence long term planning. Further, each school has a unique personality. It must recognize that and nurture it to make it 'special', locally relevant and accountable. Developing a school on the basis of its unique personality requires vision effectively converted into missions and goals.

Ever since independence, there has been significant emphasis on human resource development in education. The effort in human resource development in education was stepped up in the post National Policy of Education 1986 period with a number of schemes at all levels for continuous upgradation of teachers, institutional heads as well as field level educational administrators. Increasing devolution of power, coupled with training and development, is an effort in capacity building and empowerment. The effectiveness or outcome of the efforts is a different question.

Finally, development of process capabilities have been emphasized by all earlier management methods related to institution building, be it MBO, OD, QC, etc. Thus, various elements of TQM have either been in trial in Indian schools or have relevance and significant potential. TQM offers a systemic approach to institutional development and quality management on a continuing basis. Hence, TQM holds a tremendous potential to draw out Indian schools from the current crisis of quality.

Quality improvement and management in education can be achieved by more than one way. It can be capital-intensive — infrastructure-intensive, technology-intensive and/or human intensive. Many among the administrators believe that quality can be achieved only with high quality infrastructure and high quality technology. However, these are not borne out by evidence. Both infrastructure and technology are instruments at the hands of humans in the system. Hence, both technology intensive and infrastructure intensive approaches to quality management depend upon the human quality and human intensive approach. In real terms, human efforts in quality improvement and management can be meaningfully catalyzed by infrastructure and technology. The reverse does not work. Within the given infrastructure and technology, human efforts are capable of achieving major break-throughs. Without timely support of infrastructure and technology, its performance may be stunted. Nevertheless, there is no better alternative to human intensive approach to quality management in education.

Given the fact that human (salary cost) consumes more than 90% of the financial resources, and there is very little additional resource for infrastructure and technology, human intensive approach becomes the only choice for the largest majority of Indian schools. Hence human intensive methodology to quality management is more or less the only choice. A warning, however, is in order at the same breath. Even if some schools can afford both technology and infrastructure, the key to success is in their human component.

Total Quality Management with its focus on 'clients', and 'involvement of all' is essentially a human intensive approach to quality management. The approach is relevant, feasible and applicable in Indian schools. And, it can prove that quality is free.

Conclusion

There are two dimensions of quality management hidden in the coinage -- "Total Quality Management". One is the "Total Quality" and the second is the "Quality Management". This implies that the quality can, probably should, be seen in a holistic manner. Partisan or fragmented way of looking at quality in

organization like a school is neither desirable, nor feasible; for, an action in one area sets out a chain of reactions in several other areas of schooling and school management. The other implication is that quality is not incidental or accidental. It is a planned and deliberate process; it is by design, hence can be managed. Total quality management provides an important opportunity to look at quality in a holistic fashion and also provides instrumentalities for managing quality.

The conventional concept of quality control transferred to education is the pass-fail syndrome. All those who pass satisfy the product specification; in industrial terms, the failures are the detected and eliminated 'products'. Firstly, the definition of 'pass' – from 33% to 100% is more heterogeneous than fail that range from 0% to 32% only. More importantly, the concept of 'fail' is both costly and dangerous. As mentioned earlier, the annual cost of failure in Board Examination is Rs. 90,000 millions. This mechanism of quality control is expensive and wasteful. Further, this failure is also dangerous, for it damages the self concept of these energetic young people.

Some schools achieve 100% pass with 60 to 70% students in 'A' grade. Such schools in fact use quality assurance rather than quality control techniques. The admission is based on merit assessed through their own tests and interviews. They maintain a well planned annual calendar, each class is engaged with quality teaching often supervised; students are specially prepared for examination, parents are involved both in monitoring and supporting education of the children. The control is in specification of the raw material, equipments and processes. In other words, these are well managed schools, hence good quality schools (Navaratnam, 1997). Endeavour of TQM in Indian schools is to create a culture of management leading to quality.

Systems Thinking

Introduction

World over, the new trend is institution based management for development. Quite logical, indeed. Every institution has a personality of its own. It is more holistic than we normally think it to be. Hence, it is necessary to look at each institution in its uniqueness and totality. This too is an important message for total quality management movement.

Each institution comprises several sub-components that are interrelated and interdependent — infrastructure, personnel, instructional resources, programmes, activities, etc. While managing institutions, we may focus on one or the other aspect of the institution. However, action in one area often results into a chain of reactions in other areas. There is, hence, a need to develop a holistic thinking about the school. Even when you attend to one dimension of the school, you are conscious to recognize its linkage to, and effect on, other constituent elements of your school. This need for 'looking at an institution as a complete organism' is what I would call systems thinking. There is a rich literature (Sharma, 1985) on systems approach to education.

Systems Approach

Origin and development of systems approach can be traced to cybernetics, biological sciences and industrial management. Romiszowaski (1994) contends that 'the term "systems approach" grew out of general systems theory and cybernetics as a creative and heuristic approach to the understanding and improvement of probabilistic systems'. It was recognized that the complexity involved in social systems could not be controlled or manoeuvred easily as can be done in simple mechanical processes. Hence, systems approach is characterised by careful analysis of inter-relationships and interdependence of

constituent units and subsystems and 'interpretation of these interactions in terms of predicting what may happen in other parts of the system if certain changes are made in a particular part' (Neil, 1979). "From the perspective of managing change, a system may be defined as being an organized assembly of components, which are related in such a way that the behaviour of any individual component will influence the overall status of the system". "All systems, physical or 'soft', must have predetermined objective that the interrelated components strive to achieve" (Patton and McCalman, 2000).

In biological sciences, human body is seen as a system comprising several components like limbs and the main body. Further, the main body comprises digestive system, circulatory system, etc. Although these are called systems, these are parts of the larger system – the human body itself. Obviously, we know through our sufferings what happens to other systems if and when, for example, our digestive system does not function well. The important issue is to recognize that --

- Human body is a system;
- As a system it comprises several sub-system; and
- These sub-systems are interrelated and interdependent.

Now, if we consider the human being (not just the human body) as the system, it comprises the body, the mind and the soul. We know how mind makes the body work even if we do not understand how soul plays its own role in determining the processes of the mind. Thus, human body also becomes a sub-system of human being.

Page and Thomas (1978) defined systems approach to education, in *The International Dictionary of Education*, in these words, "Conscious use of systems analysis and systems design techniques is an endeavour to identify and solve complex problems in learning and instructional systems. The components of the approach include the establishment of a systems boundary, the identification of all actual or possible inputs and outputs to the system and examination of their interaction". The few important concepts that emerge out of the definition by Page and Thomas and other authors on systems approach are:

Problem Solving: The purpose of systems approach is for solving complex problems. Hence, systems approach is not a fancy intellectual gymnastic but a practical tool for problem solving. Main contention in systems approach is to solve a problem in the context of interrelationships so that impact – adverse or otherwise – of the action in other areas is contemplated and recognized in advance.

Systems Boundary: Digestive system is a system; it is a sub-system of a human body as a system; human body is a sub-system of human being as the system. This example depicts a case for defining the systems boundary so that one may restrict the analysis and action for problem solving to a meaningful limit.

Input: The word input is self-explanatory. It includes all that is invested to create a product. In industrial terms, input includes raw material, infrastructure, human resources, etc.

Process: Process implies, largely, the activities that go on to convert the inputs into a product or an output. Whatever a goldsmith, for example, does, to convert gold into an ornament, is the process.

Output: Like input, output too is self-explanatory. Output is the product that comes out of a system – the converted form of input through processes.

Environment: Environment is the setting in which a system works. It is an extremely important concept, particularly in social systems, for not only does a system influence the environment but also the environment influences the system. With the equivalent input, rural schools generally perform less than their urban counterpart; the rural environment is an important determinant of the systems efficiency.

Feedback: Set in an environment with a well-defined boundary input, process and output are in a linear sequence. Since there are causal relationships, it is believed that feedback has the potential to improve system performance in the quality and quantity of products through adjustment of inputs and processes, and sometimes by adjusting systems goals.

The systems have also been explained in terms of components (sub-systems) and their interrelationships and reactions. But there are no contradictions between these two approaches. The various components of a system mentioned above can be represented diagrammatically (Figure 4.1.).

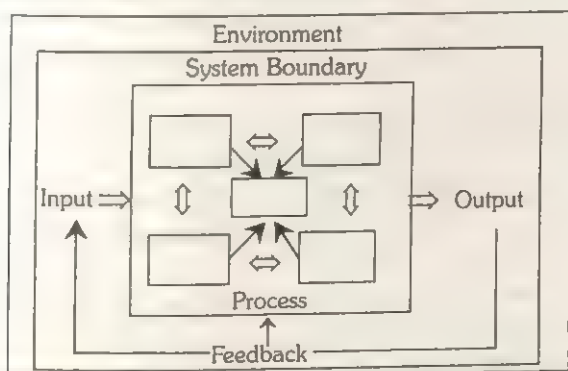


Figure 4.1. Systems Approach

From this understanding of general systems approach, we should now look at an educational institution as a system.

Educational Institution as a System

A systems framework is often explained through input-process-output model set within an environment. An educational institution is a system – it has inputs like students, infrastructure, financial resources, instructional resources, etc. The processes are admission, instruction, evaluation, etc., and output are the graduates – their behavioural, academic and physical qualities. A school has well defined boundary and an environment in which it is set. Further, these components as inputs, processes and outputs are not independent of one another; they are inter-linked and inter-dependent on one another in a systemic framework.

Unlike the industrial system where the input, process and output are clear cut and measurable, these are not so cut and dry in educational institutions. The debate often is in defining what is the input and what is the output in an educational institution since in many cases output at one stage becomes an input in another stage – it becomes a cyclic process. For example, management and administration as a process produces teachers' satisfaction on the job (output). Satisfaction on the job acts as an input for improved instructional systems and students' performance (output) (Figure 4.2).

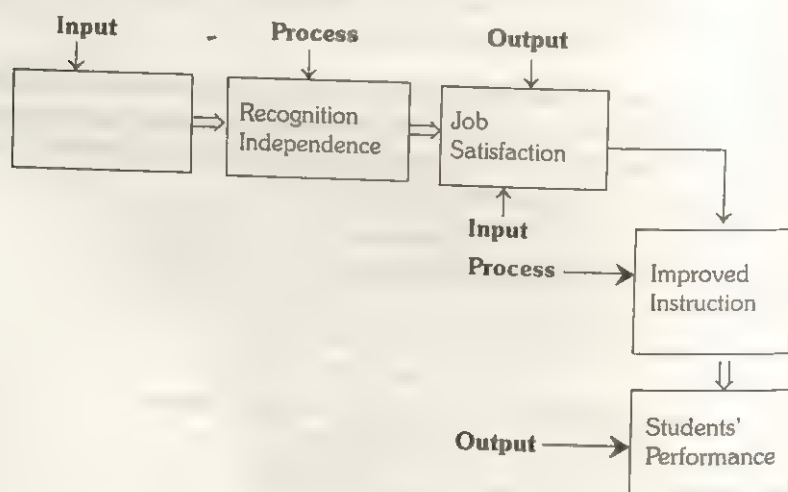


Figure 4.2. Output at one stage as input to the next

Another major complexity in applying the concept in education is the quantifiability and measurability of the input and the output. Nevertheless, accepting the limitations, let us look at what constitutes an input in an educational institution. Similarly, we will examine what constitutes an output as well as the process. As the word itself indicates, input implies such elements that are invested in an institution. Navaratnam (1997) identified the students, employers, universities, parents, community and government as the customers and stakeholders of school education. Key inputs to schooling are curriculum, students, teachers, support staff, administrators, managers, facilities, classrooms and government policies. Key processes are curriculum development, accreditation, teaching, enrolment, financing or funding, administration, management, students support services, community services, commercial activities, human resource management, facilities developed, and promotion and marketing. Similarly, key outputs are educated and trained graduates, research findings and community services.

In an industry, the raw material, which is the input, is processed to produce finished goods. Should we draw this analogy to education, it would imply that the raw material in the form of students' cognitive, conative and affective qualities and other attributes are processed through instruction, co-curricular activities, student assessment, and other activities to develop an all-round personality of a student. Just as industrial raw materials require machines, equipment, workshops as well as humans to be processed into a finished product, institutes also require teachers and principals as well as text-books, laboratories, audio-visual aids, classrooms, sports facilities, etc. to process the raw material, the qualitative attributes of students to make them educated and cultured humans.

From this analogy, the output of the education system is the quality of the students. This not only implies their academic achievement and excellence, but also their performance in other areas like physical, mental, emotional, intellectual and moral qualities. Though these are difficult to measure, yet not impossible to be processed.

There are other components as well. The principles of total quality management indicate that the teachers and other staff spend 6 to 8 hours a day, 220 days a year and for 20 to 25 years. Hence, development of the staff, their career growth, job satisfaction are also very important. Job satisfaction and career growth can also be seen as the output of the institutional system. The inputs are the management systems, facilities, career promotion opportunities, recognition and rewards, etc. The processes are inter-personal relationships, recognition, motivation, building, etc. As mentioned earlier, in schools as systems, many

such outputs are recycled as inputs to the institution. It is important for a principal to identify inputs and outputs with their quantitative and qualitative attributes, and also identify such elements in schooling which are recycled where an output is fed back as an input.

Similarly, the processes in educational institutions comprise instruction in classrooms, laboratories, libraries and field situations, examination, evaluation, co-curricular activities, management and administration, linkage and interface, etc. There are wide divergences in the nature, intensity and quality of these processes. Within the same school, there may be an effective mechanism of emphasizing and managing co-curricular activities, but the instructional processes may not be so well designed and implemented. There are schools with strong tradition of social service (linkage and interface) with average performance in academic activities. Just as in case of input and output, it is necessary to identify various processes in the schools with their qualitative attributes. Further, in case of processes, it is necessary to identify micro-processes for better management. For example, instruction in classroom, instruction in laboratory, projects, field trips are micro-processes that constitute the instructional system. Again, there are variations in the quality and intensity of instruction related micro-processes within a school.

Sub-systems

A system obviously comprises several sub-systems. The basic approach to systems thinking is identifying the sub-systems and understanding their inter-relationships and interdependence. In fact, it is the inter-linking and interdependence of sub-systems that configure a system. Hence, a sub-system can never be equal to the system. The sub-systems concept as applied to institutions has been defined and described in several ways. The various sub-systems are infrastructure, instructional systems, linkage and interface, management and administration, etc. In one of our exercises, we identified ten such areas or sub-systems of an educational institution (Mukhopadhyay and Narula, 1992). These are:

1. Vision, Mission and Goals;
2. Academics;
3. Personnel;
4. Finance;
5. Infrastructure;
6. Linkages and Interface;
7. Student Services;

8. Rules, Regulations, Methods and Procedures;
9. Institution Building Process; and
10. Managing People at work.

You would probably notice that the sub-systems vary from one another in their very nature. For example, finance, infrastructure are somewhat concrete and measurable, vision, mission and goals are abstract. Academic activities, student services, managing people at work are organizational processes. But their interdependence is obvious. For example, infrastructure and finance are mutually interdependent, as much as academic activities are dependent upon infrastructure and finance. And, all aspects of the institution are guided by the vision, mission and goals. The interrelationship of all these sub-systems is depicted in the diagram below (Figure 4.3).

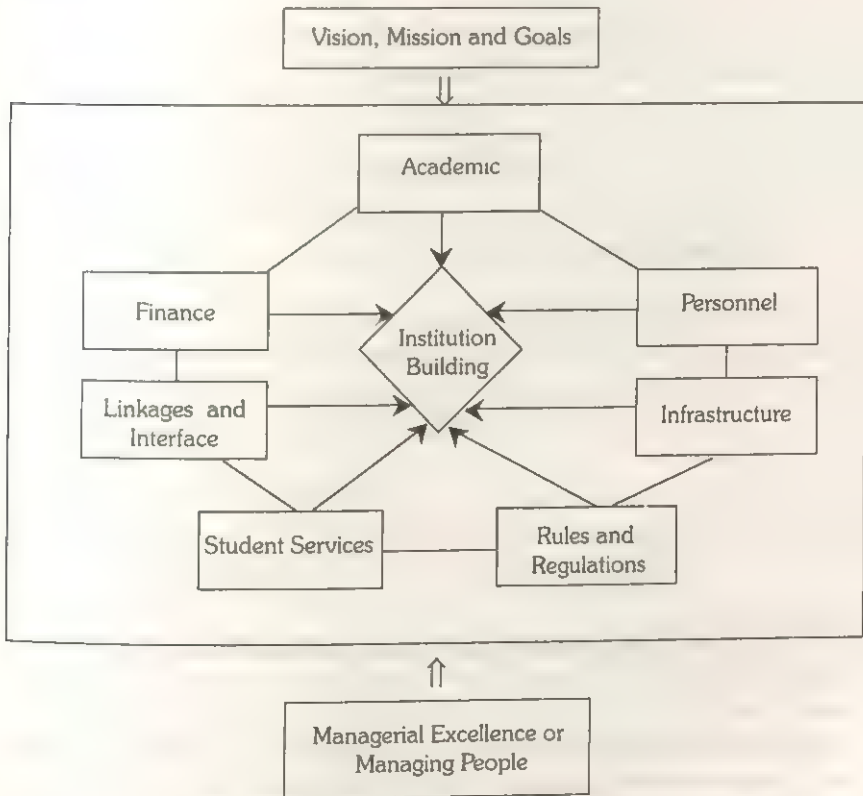


Figure 4.3. School as a system with interrelated sub-systems

The institution building is the goal of management. Figure 4.3 indicates the interactive pattern of various aspects of institutional management for institution building — the ultimate goal of management. It also indicates the pivotal role of excellence in management — the qualities of a principal in managing people at work. In fact, it holds the entire edifice of the institutional management. On the top end are the vision, mission and goals that guide the path of development of an institution. The institution comprises several major components which in turn comprise several sub-components. These sub-components are again interrelated and interdependent. Elaborating on the issue, let us examine just one area, namely, academic management. Academic management constitutes five major components, namely, admission, curricular planning and management, management of instruction, management of student assessment, and planning and management of co-curricular activities. (Figure 4.4).

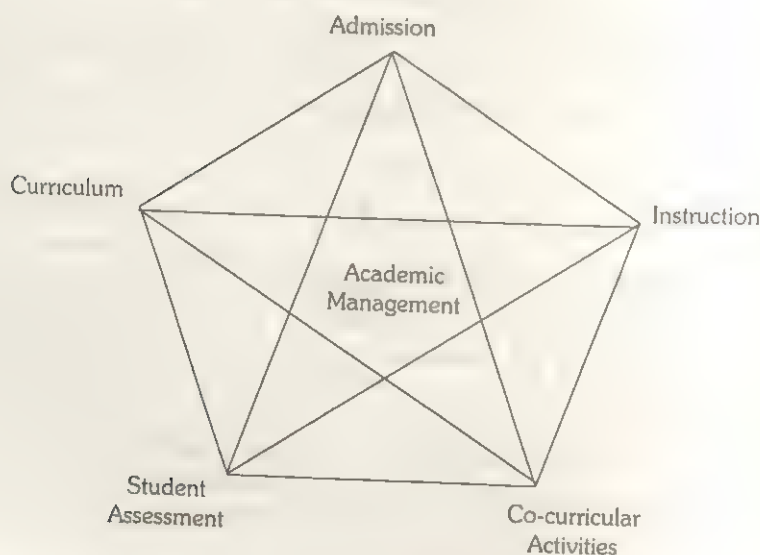


Figure 4.4. Inter-related dimensions of academic management

This diagram illustrates, on the one hand, the five components of academic management; on the other hand, it also indicates how these components are interdependent. For example, instruction is dependent on curriculum, examination, admission as well as co-curricular activities. The quality of instruction is pitched at the (a) quality of students admitted in a school, (b) nature of the curriculum, (c) expected learning outcome. etc. Similarly, depending

upon the emphasis, curricular and instructional planning takes into consideration co-curricular activities and so on.

That each component, mentioned earlier, comprises several sub-components can be further illustrated by analyzing the components of one of the five areas of academic management, e.g. instruction. Instruction in a school includes:

- Classroom teaching;
- Home assignments for students;
- Project work;
- Laboratory Practical;
- Field Visits; and
- others.

Not only these are sub-components of instruction, these are all interrelated. For the same topic or unit, different instructional goals may be achieved through classroom teaching, field visits and so on.

Let us review various components of institutional management and practical implications of systems thinking vis-à-vis institutional management. As mentioned earlier; there are ten sub-components of the system:

Vision, Mission and Goals: Vision provides the direction of movement to an institution. Vision is futuristic – painting the picture of a school as it will be in years to come. Missions are ‘unbundling of vision’ into landmarks; and goals are the milestones on way to the vision through missions.

Academic Management: Academic management is the core of an institutional process. It comprises planning and management of admission, curriculum, instruction, examination and co-curricular activities.

Personnel Management: An institution rests on the shoulders of its people. Hence, personnel management can hardly be over-emphasized. Personnel management comprises personnel recruitment and induction, staff development, maintenance of personnel records, management of staff unions, conducting staff meetings, management of staff welfare, job allocation and management, etc.

Financial Management: There are several aspects of financial management in an educational institution. These are budgeting, resource mobilization, resource development and optimization, resource utilization, accounting and auditing, etc.

Infrastructure Management: While infrastructure is developed with resources, it is the 'adhar' that holds all activities of an educational institution. It comprises components and activities like construction and extension of building, utilization and maintenance of infrastructure, library, laboratory, audio-visual aids, hostel, sanitation, sports and games facilities, vocational education facilities, etc. Proper planning and management ensures optimal utilization of resources; it also ensures higher quality of schooling.

Linkages and Interface: Institutions no more live in isolation. They are located in a larger environmental canvas where the school and the environment mutually influence each other. Further, with the new emphasis on 'client-orientation' in total quality management, the need for linkages and interface with 'clients' or beneficiaries has assumed new significance. The linkages and interface can be examined in relation to parents, old students, immediate neighbourhood and the community, local bodies like Panchayats, Municipal Corporations, authorities at higher levels, non-educational authorities like Public Works Department (PWD), Transport, Health, etc., educational institutions at local regional, national and international levels, employers, etc.

Student Services: We have contended earlier that in the context of total quality management, quality of life in schools is more important, and not just the performance in examination. Students are the main body of an institution. Hence, student services hold the key to improvement of quality of life in institutions. The management of student services can be examined with respect to creation and management of a student (and parent) information systems, guidance and counseling facilities, student amenities, incentives and other facilities (scholarships, etc.), involvement and student participation in decision making.

Methods and Procedures: Educational institutions are formal organizations. They are governed by certain rules and procedures that are common across the institutions under one dispensation, say a state government or Kendriya Vidyalay Sangathan. Institutional management deserves understanding and dynamic interpretation of the rules, regulations, acts, statutes, as well as various administrative procedures like purchase, departmental promotion committee, writing off, performance appraisal, grievance redressal, inventory control and management, costing and cost optimization, etc.

Institution Building: Management of an educational institution can lead to either of the three stages – organizational degeneration, maintenance of status quo or organizational development through process of institution building.

Institution building is principal's 'Dharma'¹ (religion is a poor translation). The Indian philosophy is loud and clear --

"Swadharme Nidhanam Shreyaha, Paradharmo Bhayabaha".

To die performing one's duty is no ill;
But who seeks other roads shall wonder still."

(Arnold in *The Song Celestial*)

It is the religious duty of a principal to build institution, neither maintain status quo, nor allow degeneration. What is teaching for a teacher, is institution building for the principal. Institution building also comprises several steps, namely, institutional evaluation, organizational diagnosis, institutional planning and organizational development.

Managerial Excellence or Managing People: Managerial excellence pervades all aspects of institutional management, and it implies personal qualities of the principal as manager and leader. This component comprises understanding self, communication – oral and written, leadership, group dynamics and team building, decision making, conflict management, management of motivation, time management, management of change, etc.

Evidently, the components of a school as a system are actually inseparable. A change in any one area will trigger off changes in many areas. Hence, it is essential that the entire institution is kept in focus as a format of thinking. In fact, the total quality management in education warrants a systemic view and thinking of an educational institution since emphasis is on total quality.

The main problem in strictly sticking to input-process-output model for management of schools is that, unlike the industrial sector, the educational institutions deal exclusively with human beings — the students, teachers, supporting staff, parents, etc. Human beings are sensitive, temperamental and they also vary widely in their instinctive qualities. For example, in an industry, the raw material has a particular specification and all conform to that norm. A school admits students of wide variation in their intelligence, emotional maturity and other attributes. Even, students with the same intelligence differ in their

¹ The Sanskrit word *Dharma* is often mis-construed and related to religion which is a denominational concept. The word is derived from the seed 'Dhri' – to hold. One that holds things in place is Dharma.

behavioural attributes and also in academic performance on the basis of their emotional maturity.

The basic spirit behind the argument of looking at an institution as a system is developing a holistic and systemic thinking so that principal as well as other members of the school may look at the institution as a whole rather than as fragments of their own territories. Typical instances of fragmented view are: teachers in-charge of examination, library, student activities, etc. consider each one of their respective areas as the most important and they insist on priority rather than looking at the overall interest of the institution.

On the other side of the coin, there are many principals who happen to be good teachers of their subjects and enjoy teaching. They devote most of their energy to teaching; some may go little beyond to cover curricular and instructional planning and management, neglecting other areas of institutional management. There are other principals who enjoy 'power and authority' associated with the position and concentrate on rules and regulations and financial management; the academic management or management of interface and linkage with the outside world gets neglected. Only late in the day, they realize the lop-sided developments in the school where the hands do not cooperate with the legs, and the collective body (staff) refuses to work with the mind (the principal). Institutional management for institution building is a wholesome game. There has to be a holistic view and consideration

In order to build an institution, it is necessary to develop systems thinking. It is only the systems thinking that can guarantee assessment of consequences of management intervention and action in one area on other areas of institutional management. For example, even in apparently innocuous areas like academic management, a decision on use of interactive instruction through cooperative learning will demand changes in infrastructure. Theatre style of classroom is suitable for lecture format of instruction. For cooperative learning, students will need space for activity, circular or semi-circular seating or standing arrangement for discussion, free space for buzzing, etc. Similarly, there will be demand of specific set of teacher skills. For example, in lieu of content and communication skills in conventional lecture, teachers in interactive and cooperative learning format will need a different instructional design skill, skill for management of learning.

It is equally important to percolate systems thinking down to the staff. It is only through understanding of the mutuality of roles, functions and interdependence of sub-systems that the inter-component (sub-systems) rivalry and hence conflict

can be reduced. On the reverse, the understanding of each others' role leading to mutual support will make institution building easier and shall ensure organizational self-renewal.

Conclusion

Each school depicts a unique personality of its own. Though there are common elements both in the structure and processes of schooling, the way these components relate to one another to create the configuration that the school is, is something unique. Indeed, that warrants looking at each school to have an independent style – a system. From the angle of TQM, importance is more on the orientation of the principal. He or she must look at a school as a total organism, and not as fragments of activities and structures.

Customer or Client Orientation

Introduction

Customer focus is the backbone of TQM. Customer satisfaction and beyond has been considered as the ultimate goal of quality management. But who is the customer? The answer is relatively easy in case of industrial products – anyone and everyone who buys and consumes (uses) the product. The definition of customer can become little more complicated as one moves from industry to the service sector. It takes the most complicated form in education; the most intricate question in education is who is the customer? The students, parents, employer, community, government or all of them? If students are customers, who or what is the product? This set of questions need to be examined.

Customer or Client

The connotation of the word customer is a commercial relationship – a relationship based on the transaction of goods or services in exchange of money between two individuals or two groups of people. Indian education has been sensitive to this kind of concept. Customer is an inconvenient word in Indian education because the word connotes teacher as supplier and student as consumer. This kind of teacher-student relationship is culturally alien to Indian society.

Education has been cradled in the Gurukulas. And the Indian psyche is still attached to the concept of the teacher as a Guru. Evidently, Guru is not equal to a teacher; he or she is much more than that. Teacher teaches but Guru dispels darkness.

*"Agyana Timirandhasya Gyananjana Salakaya
Tat Padam Darshitam Jena Tashmoyee Sri Gurabe Namaha"*

In the Indian tradition, the preceptor is to be treated as God — “*Acharya Deva Bhava*’.

The word ‘Guru’ has entered the international vocabulary. Sallis (1996) refers to Deming, Juran and Crosby as ‘Gurus’ of TQM. This western use of the word ‘Guru’ is not with the same meaning and implication as it is meant to be in Indian classical tradition. While the disciple treats the Guru as God, as mentioned above, Guru also prays to God that both (Guru and the *Shishya*) are able to learn together and be equal to the expectations of the *Shishya*:

“*Saha Nababatu, Saha Nau Bhunaktu Saha Biryā Karabubahai
Tejaswinavadhitaṁvāstu Ma Vidwisabahai*¹”

This will indicate the sacred relationship between the teacher and the taught that has been the hallmark of Indian tradition. Hence, the word customer implying delivery of education in exchange of money has been largely unacceptable. Before we either dispose off this western concept emerging out of materialistic philosophy or accept it, we need to examine the objective conditions or ground realities in Indian education, as it is today and likely to be tomorrow.

The British era brought in the new industrialized model of educational organizations through classrooms and schools. The major changes were --

- Students enrolled with the schools, not with the teachers – unlike with the Gurus in the *Gurukula* System;
- Students learnt what was decided by the state, not by their teacher;
- Teachers are recruited by the state or school students have no choice;
- Teachers received cash salary in exchange of classes instead of services by the students and contribution by the community;
- Students paid cash fees to schools (government grants were also money paid by parents through indirect taxes);
- Good schools charge more fees than the poor ones – higher price for better quality; and
- so on.

¹ (He, the supreme God, may protect us both (the teacher and the pupil), may nourish us both, may we both perform the heroic deeds together. May our study be for sharpening our minds. May we not envy each other, may we always live together happily.)

Does it indicate that education since the British era has brought in a qualitative shift — selling education for a price; teachers take classes in exchange of money? Added to this is the contemporary aberration in educational systems — what proportion of teachers fulfil their commitment — take at least the classes that are supposed to be taken in exchange of the salary?

Further, if we go into the parallel processes of education, large number of students take private tuition from the teachers of the same school. Here, there is a direct transaction of money between the teacher and the students. My own village database² indicates that even at the primary level more than 88% students take private tuition. What is not taught in the school is covered in the private coaching classes. In Delhi, and perhaps this is true of other places also, private tutors charge fees per hour; they maintain proper record of attendance-sessions taken by them with their own students. There are also contract systems where a tutor contracts fees for percentage of marks secured by the student. The private coaching classes or parallel colleges of Kerala are well known. This scenario is almost all pervasive though there are small islands of difference here and there.

Now, is Indian education commercialized enough or market driven to merit the concept of students and parents as customer and teachers, educational managers as suppliers? Is it likely to happen more and more as we move on through the new millennium years and private initiatives in education become more and more prominent? Should the answer be an emphatic 'yes' despite the discomfiture and cultural hang up, 'customer orientation' is a relevant concept in Indian education too. I shall however, not insist on the terminology 'customer', but the concept is extremely important for quality management.

Our search for non-commercial synonyms for 'customer' ends up with words like 'client', 'end user', 'beneficiary', etc. I am not uncomfortable with any of the words that suit my reader provided it does not imply a donor-receiver relationship because teachers and educational managers are not donors; they provide education in exchange of money, either directly or indirectly through government grants drawn out of taxes paid by the people. From these considerations, we may use the word client to mean the people whom other authors have termed as customer.

² A computerized database is maintained in Udang by Institute of Education, Rural Studies and Development on more than 48,000 people of a cluster of 20 villages around Udang. One information in the database is private tuition (Mukhopadhyay, 1999).

In customer or client orientation, the focus is on accountability and interdependence. The major agenda is to ensure that the customer gets what he or she pays for – value for the money (Navaratnam, 1997), directly or indirectly, in the form of fees, opportunity costs and non-tuition private cost. And, from that angle, client focus demands accountability – economic as well as social.

Clients

On the basis of client orientation or client focus in TQM, there is a paradigm shift in focus — from providers of education in the conventional system to the clients or students in the TQM scenario. Figuratively, it amounts to reversal of the base and altitude of a triangle inverting the pyramid:

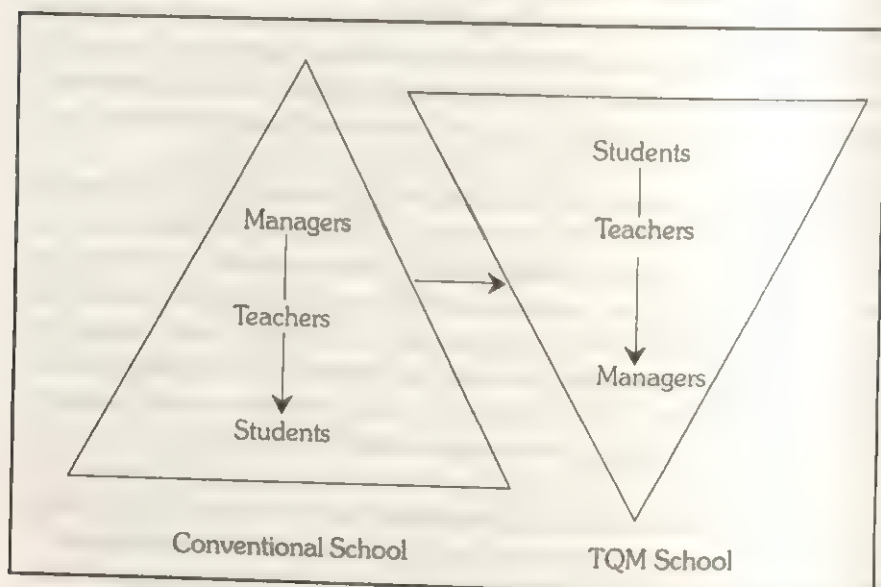


Figure 5.1. Shifting of focus from managers to students through teachers

Source: Sallis (1996) — modified

In the conventional system, highest importance is given to the managers, namely principal and members of the Board of Governors. It is they who decide what should happen in a school. Their decision is percolated down to the teachers who implement and the students are on the receiving end – often passive. The managers decide what is good for the students and students are handed down the programmes. In TQM culture, it is the clients needs and wants that determine the educational programme. In other words, educational programmes are

designed by the teachers and then managers on the basis of what the client needs are. This indeed is a paradigm shift in the culture of management of schools.

While client focus is accepted as a major characteristics of TQM, who are the clients. In case of industrial product, any consumer of the product is a customer. The situation is different in case of education. Students receive education; hence they are clients. Parents and the government pay for the education; hence they too are clients. On the 'queue' are employers, community, society, etc. Hence clients in education need a fresh look.

There are at least two kinds of clients, from the angle of TQM in education – the internal and external clients (Figure 5.2).

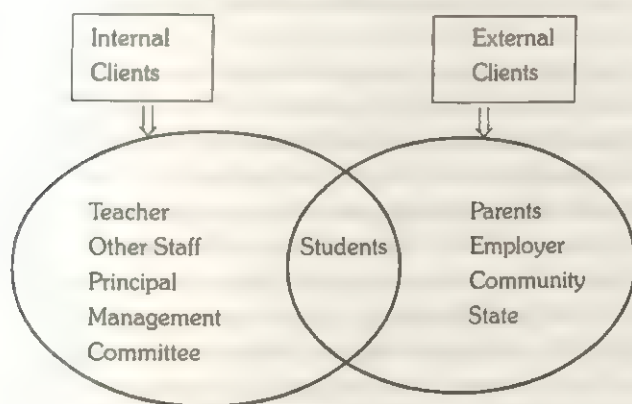


Figure 5.2. Internal and external customer and location of students

The external clients are parents, employers, immediate community and the state – government and the society at large. Internal clients are teachers, non-academic staff, principal and educational managers. Students are internal as they are not only part and parcel of the institution but also the very core of the institution; they are also external since they are the immediate customers of the day to day transaction of education in the school.

Among the external clients, students and parents are central; government, community and employers are really end users of the human capital formed through education.

The real implication of the focus of TQM on the client is the importance attached to client satisfaction. In fact it is a triangle of needs, wants and

satisfaction as depicted in the Figure below:

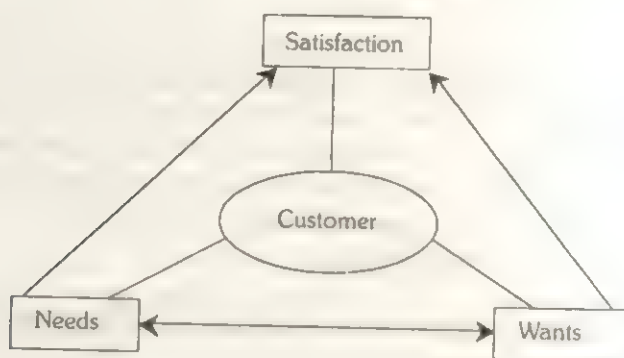


Figure 5.3. Customer needs-wants-satisfaction triangle

The purpose of presenting this triangle is to draw your attention to the three elements, namely, needs, wants, and satisfaction. The standard TQM literature has generally mentioned about customer satisfaction and beyond. We need to sort out the relationships among these three nodes of the triangle. There are several in-equations. Firstly, customer needs may or may not be equal to wants. Secondly, the need of different clients of the same school, namely, students, parents, members of the community and employers can be different. Thirdly, client satisfaction may not be equal to need-satisfaction; it may be much more, depending upon, say, satisfaction of wants. Hence, in education, customer or client satisfaction is a tricky area. Meeting the client 'need' can be seen as the minimum necessary condition for satisfaction or the 'hygienic' factor; and meeting the 'wants' is the sufficient condition for client satisfaction or 'motivating' factor.

Should we consider students as the first and foremost client, we need to ascertain what satisfies them. Relevant questions are: What do they want to gain out of a course? What do they want to learn of a subject or a unit or a topic? There is a popular claim that students want good marks and a certificate, not necessarily learning. There are, however, students in the same institution who demand 'actual education', not just the marks.

Parents, second on the queue, want high marks and certificate but not necessarily without efforts. Between the parents, I guess there is a difference in expectation between the mother and the father. The mother who normally has a better and holistic look wants human qualities, not merely intellectual achievements and

high marks; and the father who is more exposed to the competitive job market is more concerned with job prospects.

Employer satisfaction depends upon the skills that an employee brings in so that he or she is readily usable by the employer and is instantly productive. In fact, one of the growing expectations among the employers in the western world is the employee's familiarity with TQM (Tuttle 1994). Many major Indian employers use marks and certificates as only the eligibility criteria for application; they do not recruit on the basis of marks. For example, Banks, LIC, UPSC, SSC, State Service Selection Boards, etc. conduct their own selection tests. Only those who succeed and survive on competitive basis are called for interview. This is equally true for admission to institutes of higher education. Most universities, Indian Institutes of Technology (IITs), medical colleges, and private institutions conduct their own entry tests. Hence, the employer expectation is not the exit quality of the graduate at the school level but the entry quality in the organization. While obviously there is no match between school exit quality and job entry quality, what they look for is the nearest match or equivalence.

The expectations of the government also vary between government as an employer and government as the state machinery responsible for human resource development. As an employer, it also wants readily usable skills. As an agency responsible for deciding educational policy and implementation of the policy, its expectation is citizenship qualities that enrich the community and national life. In Indian condition, Government is the main provider of education. It can genuinely have an expectation vis-à-vis 'rate of return' of investment in education. Similarly, the immediate neighbourhood and community have their own expectations from a school. Let me quote the case of Udang High School, a usual run of the mill government aided senior secondary school in Howrah, West Bengal. Whenever, there is flood, community takes shelter in the school, and it is none other than the students who, under the guidance of the teachers and headmaster, take the lead in sheltering the community. In case of fire, again the students and the teachers are the fire tenderers. Invariably, all the local youth groups use school premises for staging drama and school ground for sports and games activities. Community expects the school to belong to the community. On the other hand, whenever the school is in crisis, it is the community that extends its helping hand either in the form of cash money or free labour for maintenance and upkeep of the school. The community expects students to be caring for the community and its interests.

It will be evident that the expectations of different categories of clients from the same institution are different; and sometimes these are incongruent with one another. How does a school satisfy clients with contradictory expectations?

There are, however, common grounds to satisfy apparently contradictory needs. For example, high quality instruction differentiated according to abilities, leading to mastery learning strategies ensures both (i) good performance and high scoring as well as (ii) good learning. Hence it should satisfy students, parents, may be the employer too. Similarly, though students and parents expect good academic performance, they appreciate exposure and excellence in sports and games, as well. In TQM jargon, you may call it providing 'beyond expectation'. Same is true for human qualities; no parents or even the students, despise it; they may not be prepared to pay the price for developing the human qualities.

There are changing expectations too. With increasing number of competitive examinations for jobs and also entry into institutions of higher learning, students and their parents are realizing that good marks in the Board Examination is no more an adequate and valid license to higher education or jobs. The skills and competencies, including interpersonal skills, are necessary requirements. Children develop these social skills either by imitation or by non-deliberate emulation. There is hardly any school that offers a deliberately designed programme on development of social skills. Considering social and inter-personal skills as important life skills, any effort on the part of the school to develop these skills will satisfy all categories of clients.

There are two questions that bother us now. Firstly, expectations are diverse and changing. Secondly, expectations are largely unknown. From the angle of TQM in education, it is necessary to assess client needs and do it periodically. Further, such needs assessment should be done with multiple client groups and efforts have to be made to match and synchronize them to find common denominators.

Since the largest number of the clients in school education are either first or second generation learners, rural parents are ill-informed of societal requirements, job market, equation between talent and nature of courses, etc. There is wide divergence between the expectations from education at large and schools, more specifically among the rural and urban parents (Sansodhan, 1999). As such they may not be fully aware and competent to understand what to expect and what should satisfy them, and articulate their expectation of the school in concrete and meaningful terms. Thus, strict customer orientation, the way it is done in the western world or can be done in the private fee charging institution in Indian metropolitan cities, may not be possible in all types of schools. The additional dimension in the larger Indian context, hence, has to be client education for developing expectations.

Client Education

Let us elaborate this point of client education and awareness. While most of the rural parents think education is 'free', they hardly realize that it is paid for by them through the indirect taxes paid by them. Hence, education for their children is not by the courtesy of the state or the school. They have every right to ask for account and performance. This is just one instance. Large majority of the immediate external client is still ill-informed about their rights and expectations. Hence, conventional client orientation may not be as effective as it can be with clients who are well-informed and who buy education directly from the fee charging private institutions.

Another important alternative is to look at some of the specifications and examine whether customer expectations and satisfaction can be built around each one of them. There are certain specifications – though not product specification, but input and process specification (Table 5.1.)

Table 5.1. Input and process specifications for schools

Input	Process
Principal/headmaster	No. of working days
Qualified teacher	Prayer meetings
Salary	No. of classes per day
Teacher: Pupil ratio	Laboratory practical
All weather rooms	Co-curricular activities
Laboratories	study visits/field trips
Library	Internal Supervision
Play ground and materials	Periodic inspection
AV equipments and material	Accounting and auditing

Client education can be built around such input and process components. There are specifications for all the items listed in the table. These specifications are

prescribed by the state that administers education. For example --

- It is specified that there should be 220 working days per year. Students and parents will be satisfied if a school is held for 220 days in a year;
- For teaching in senior secondary classes, teachers should have post-graduate degrees;
- should the school ensure that senior secondary classes are taught by qualified teachers, it should provide minimum satisfaction to the clients; however,
- should the teachers teach well, be affectionate to the students and also cooperate well with the parents, client satisfaction will be much higher.

Such examples can be multiplied, but may not be necessary. We should note two important points in this regard. Firstly, these specifications are intended to manage quality – mostly through quality benchmarks. Secondly, the specifications offer only the minimum basic condition for satisfaction. For example, will the students be more satisfied with a teacher who has first class post-graduate degree but unconcerned about them and treats parents as unnecessary liability compared to another teacher with, say, honours degree but very caring and respectful to the parents? In education, specifications of inputs and processes are necessary conditions for client satisfaction, but behavioural components are the sufficient condition. Thus, teacher behaviour is an important criteria for client satisfaction, and this remains largely undefined.

Thus, customer orientation and client need assessment will need to be looked into from a whole range of behavioural expectations from the students, teachers, principals, and other staff by the parents, members of the community, etc. Incidentally, reputations of institutions are also built on such attributes. For example, people believe that students of Ramakrishna Mission Institution, Narendrapur are 'very good'; and they mean 'good behaviour' and not just the academic brilliance. This, indeed, is the reputation of the school.

Internal Clients

So far we have largely discussed the categories and attributes of external clients and need for their education. There are internal clients of the schools. TQM emphasizes on totality of quality. The totality of quality warrants looking at the humans and processes internal to the institution. Teachers and other staff live considerable part of their day and life in schools. In TQM parlance, they too are clients – internal clients. Satisfaction of the internal clients is equally important in TQM.

It does not require much elaboration to draw home the point that satisfaction of external client is significantly related to and dependent upon the satisfaction of the internal clients. A dissatisfied teacher cannot teach well nor can he or she inculcate values in the students. Hence, understanding the needs of the internal clients and their satisfaction is critically important in management of total quality. In a way, this also is an issue of accountability.

Need of the staff is to (i) feel motivated and inspired, (ii) be able to work in teams, (iii) be satisfied on the job or be able to lead their respective sections or departments. TQM demands satisfaction of such needs of the internal clients. Leadership at the top echelon of the school is responsible for management of motivation, staff morale, satisfaction on the job, building work teams, mentoring leadership, etc. This is another area of client need satisfaction. There are many instances. Let me cite two instances to draw home the points.

- All polytechnics in Madhya Pradesh are governed by the same set of rules and regulations. It was quite common to hear complaints about lack of facilities or other issues of mismanagement in most of the polytechnics that I used to visit at some point of time in my career. Exception was SV Polytechnic in Indore. I never heard a complaint – neither in public nor even in private. General attitude was, 'in such a large establishment, there can be some problems and mismanagement; rather than being critical and upset, we try to sort them out'. Most of the teachers were enthusiastic and carried a positive orientation.
- Jalgaon Polytechnic is one of the big institutions in Maharashtra. In my first visit to that institution, I found that the principal's table was spotlessly clean (no files), and he was busy calculating some examination scores. On my asking, I was told that he was doing some research on pattern and trend of performance of students in final examination. Having seen most other principals bending forward with the weight of their bag of administration, the case appeared intriguing. I asked what about his administration. He gave me a remarkable reply, and I quote, "Well, my job is very simple. I have to manage only five people. My colleagues have lot of problem – they have lot more to manage". On further enquiry, he clarified that he has to manage or lead only five heads of departments including administrative officer, but each head has large number of people and tasks to manage. Subsequently, I held detailed discussions with the heads of departments. What I learnt was that the principal worked with heads of the department at the planning stage, and encouraged them to implement their plans in their own respective styles. The principal removed

roadblocks and built leadership among the heads of departments, and slowly but steadily brought himself to the background. In TQM lexicon, this will be called transformational leadership through mentoring leadership.

Both these cases are instances of internal client satisfaction. It is this satisfaction that keeps an organization growing and self-renewing.

Supplier-Receiver Chain

There is another side of the story of internal clients where we can see a supplier-receiver loop within the school. For example, a 7th grade teacher receives students from the 6th grade. The quality of performance of the 7th graders in, say, mathematics depends also upon their learning of the subject at the 6th grade. In TQM terms, hence the 6th grade teacher is the supplier and 7th grade teacher is the receiver or client. The 7th grade teacher thus becomes supplier to the 8th grade teacher and so on. Similar analogy can be drawn between language teachers and geography teacher, for example. Performance in Geography, among many other variables, is also dependent upon the articulation or language skills which is expected to be developed by the language teacher. Main contention is to recognize the interdependence among the internal clients and their mutual accountability.

We may now take a comprehensive look at the concept of client orientation in TQM. Besides the general focus on customer or clients, there is intricate supplier-receiver relationship within the internal clients as well as between the internal and external clients as depicted below.

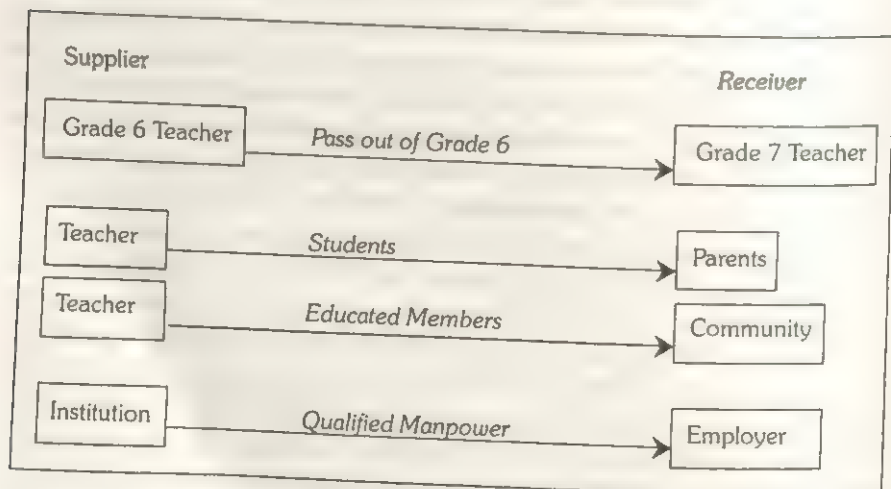


Figure 5.4. Supplier-receiver chain in schools

The fundamental issue in customer or client focus in TQM context is building education around client-need. The client need, in most comprehensive manner, points to where the need of the learner, parents, employer, community, and the state meet. And, the needs of these clients cannot be met without meeting the needs of the internal clients. The challenge is in strategic synchronization of meeting the needs of external and internal clients. That brings us back to shifting of concept from sectarian economic skill development to holistic development of humans, (as described in chapter two).

Conclusion

The emphasis in Total Quality Management in Education, as mentioned earlier, is on the client, primarily, the students. By juxtaposition of the concept of quality (as mentioned in chapter one) and customers focus, we need to take a specific stand on the issue.

Whether we retrieve from the Report of the Delors' Commission or from Indian philosophy, the purpose of education is optimization of students' physical, mental, emotional, intellectual and moral potential. The customer focus or focus on the students would imply simultaneous development of all these aspects of life. The quality cannot be restricted to intellectual development. It has to be far more holistic since education shapes a human being, and not just the apparently known facet of mind. Hence, primary issue in client focus is developing an educational programme that will simultaneously influence the development of all the five facets of human living leading to higher consciousness. Further, it would imply that the customer focus must be on all the four levels of the taxonomy of educatedness, namely, being informed, cultured, emancipated and self-actualized. As mentioned earlier, human being, whether a 'product' of a secondary school or a school of engineering sciences, is never a finished product. Humans evolve every day — whether we take the biological view of cell destruction and cell division or we take Sri Aurobindo's philosophy and scientific view of evolution of consciousness. Hence, the customer focus has to be on ensuring a process of continuous development of all facets of human life — indeed, education is to set in motion the process of development.

While we continue to emphasize on the holistic development of students as customer focus, we must also emphasize on the important internal customer, namely, the teacher. The famous line from Rabindranath about a teacher is, "A candle that does not continue to burn itself, cannot lit another". Transferring this philosophic concept of a teacher to the paradigm talked about, it would mean that a --

- Teacher who is not growing physically (health management to build inner strength) cannot help a student grow physically;

- Teacher who is not growing mentally cannot help student's mental development;
- Teacher who is not maturing emotionally cannot help a student achieve emotional maturity;
- Teacher who is not intellectually active cannot help another to be intellectually growing; and
- Finally, teacher who is not developing morally cannot inspire his/her students to achieve higher moral standards.

This would mean that a teacher must continue to be informed, cultured, emancipated and self-actualized. Only then he/she can make efforts to create 'educated' students.

The TQM schools need to develop an ethos that would ensure continuing development and evolution of teachers and a paradigm of educational programme that would ensure holistic development of the students, and not just the intellectual aspect in the humans. Only then it can respond to the needs of the clients.

Assessment of Institution

Introduction

The beginning point of a serious initiative in Total Quality Management is the assessment of the institution. Besides indicating the relative strengths and weaknesses of an institution, here and now, the assessment also provides the base-line data on various aspects of the institution on which development could be built up. There are two main objectives of an institutional assessment. Firstly, institutional assessment can be effectively used for organizational diagnosis. Secondly, this serves the purpose of benchmarking. In the context of TQM, this can be used for quality benchmarking. While Sallis (1996) deals with ISO9000 in details, some researchers described use of BS5750 to a secondary school for assessment and quality benchmarking. There have been several other efforts in institutional assessment (DoE 1990, Franke-Wikberg 1990, Maassen 1987, SCERT 1993).

Institutional assessment is more popularly known as institutional evaluation. Government of Maharashtra has developed an instrument for institutional evaluation. Way back in late 70's and early 80's, I was involved in an elaborate exercise on institutional evaluation for polytechnic institutions. There are several inter-related issues pertaining to institutional assessment. The major ones are:

- Parameters of assessment;
- Tools of assessment;
- Participants in an assessment exercise;
- Quantitative versus qualitative analysis; and
- Use of assessment data.

Parameters of Assessment

There is a wide divergence in the opinion as to what constitutes quality or what are the indicators of school quality. The issue has drawn attention of good number of researchers all over the world (Cook 1995, Davies and Ellison 1995, Fetler 1989, Kevin 1997, Moore 1996, Navaratnam 1997). Kevin mentioned sense of responsibility, open mindedness, critical thinking ability, multi-language proficiency, and active interest in other cultures as the goals to serve as school quality indicators. Moore's study is on teacher quality for school quality indicators. Bryan deals with reforms to conclude that "effective-schools research failed to produce unambiguous quality indicators". Fetler's work, on the California School Quality Indicator System, deals with administrative mechanisms in quality management.

Davies and Ellison's study is different from the studies referred above. They depended on the perceptual aspect of school quality. They identified three categories of respondents namely, students, teachers and parents. The major issues identified as indicators of quality are.

Students:

1. Quality of teaching and learning;
2. Satisfaction with staff;
3. Communications;
4. Standards of student behaviour;
5. Quality of school facility;
6. General factors and overall satisfaction with the school; and
7. The extent of equal opportunities for students.

Parents:

1. Quality of teaching and learning;
2. Satisfaction with staff;
3. Communications;
4. Standards of student behaviour;
5. Quality of school facility;
6. General factors and overall satisfaction with the school; and
7. Role of governors in the school.

Teachers:

1. Communication in the school;
2. Quality of working environment for the staff;
3. Professional environment in the school;
4. Quality of education supplied by the school;

5. Professional support offered to the teachers;
6. Role of the governing body; and
7. General satisfaction with the school.

Frazier (1997) advised keeping in mind several factors like identification of internal and external customers, surveying the customers for valid requirements and satisfaction, scanning of environment for current and future trends, using a conceptual framework for establishing a baseline and benchmarking for comparative analysis. Navaratnam (1997) mentioned that quality education is managed education. It would be evident that the quality indicators for a school vary from one category of respondents to another. This is largely due to client orientation vis-à-vis quality of schooling. There are yet other ways of defining parameters of institutional assessment. For example, Johnston County Schools' Total Quality in Education, cited by Frazier (1997), developed an instrument for assessing directly the status of an institution vis-à-vis total quality management paradigm.

According to Boyer (1996), there are five priorities for quality schools, such as:

1. Building a sense of community within that institution;
2. Centrality of language — the study and use of symbols;
3. Curriculum with coherence;
4. Creating a climate for creative learning - a place for active, not passive learning, a place where people learn to be creative, not just conforming where they learn to cooperate, as well as compete; and
5. Creating climate that affirms the building of character for every student.

Vanvught and Westerheijden (1993) also describes five elements for quality assessment. Their "general model" of quality assessment comprised:

- i) Meta-level coordinating body;
- ii) Self-evaluation undertaken within institutions;
- iii) External peer review;
- iv) Publication of reports; and
- v) An indirect link to funding.

Sallis (1996) presented a comparative picture of Quality and Ordinary Institutions (Table 6.1).

Table 6.1. Differences between a quality institution and an ordinary institution

Quality Institution	Ordinary Institution
Customer focused	Focused on internal needs
Focus on preventing problems	Focus on detecting problems
Invests in people	Is not systematic in its approach to staff development
Has a strategy for quality	Lacks a strategic quality vision
Treats complaints as an opportunity to learn	Treats complaints as a nuisance
Has defined the quality characteristic for all areas of the organization	Is vague about quality standards
Has a quality policy and plan	Has no quality plan
Senior management is leading quality	The management role seen as one of control
The improvement process involves everybody	Only the management team is involved
A Quality Facilitator leads the improvement process	There is no Quality Facilitator
People are seen to create quality - creativity is encouraged	Process and rules are all important
Is clear about roles and responsibilities	Is vague about roles and responsibilities
Has clear evaluation strategies	Has no systematic evaluation strategy
Sees quality as a means to improve customer satisfaction	Sees quality as a means to cut costs
Plans long-term	Plans short-term
Quality is seen as part of the culture	Quality is seen as another and troublesome initiative
Is developing quality in line with its own strategic imperatives	Is examining quality to meet the demands of external agencies
Has a distinctive mission	Has no distinctive mission
Treats colleagues as customers	Has a hierarchical culture

Source: Sallis, 1996.

Further, other scholars like Cheng, and Tam 1997 proposed seven models of education quality (Table 6.2).

Table 6.2. Models of education quality in school

	Conception of Education Quality in School	Conditions for Model Usefulness	Indicators /Key Areas for Quality Evaluation
Goal-and-Specification Model	Achievement of stated school goals and conformity to given specifications	When school goals and specifications are clear, consensual, time-bound, and measurable When resources are sufficient to achieve the goals and conform to the specifications	School objectives, standards, and specifications listed in the school/ programme plans, e.g., academic rate, drop-out rate, etc.
Resource-Input Model	Achievement of needed quality resources and inputs for school	When there is a clear relationship between school inputs and outputs When quality resources for school are scarce	Resources procured for school functioning e.g., quality of student intake, facilities, financial support etc.,
Process Model	Smooth internal process and fruitful learning experiences	When there is a clear relationship between school process and educational outcomes	Leadership, participation, social interactions, classroom climate, learning activities and experiences, etc.
Satisfaction Model	Satisfaction of all powerful school constituencies	When the demands of the constituencies are compatible and cannot be ignored	Satisfaction of education authorities, management board, administrators, teachers, parents, students, etc.
Legitimacy Model	Achievement of school's legitimate position and reputation	When the survival and demise of schools must be assessed When the environment is very competitive and demanding	Public relations, marketing, public image, reputation, status in the community, evidence of accountability, etc.,
Absence-of-Problems Model	Absence of problems and troubles in school	When there is no consensual criteria of quality but strategies for school improvement are needed	Absence of conflicts, dysfunctions, difficulties, defects, weaknesses, troubles, etc.
Organizational Learning Model	Adaptation to environmental changes and internal barriers; Continuous improvement	When schools are new or changing When the environmental change cannot be ignored	Awareness of external needs and changes, internal process monitoring, program evaluation, development planning, staff development, etc.

This kind of classification has certain problems. The educational quality cannot be built on either input or processes. Neither, goal or satisfaction can offer a comprehensive model. Ideally, these are seven components of a functional model.

Indicators of quality can be defined in terms of input, processes and output. And, taking a cue from Davies and Ellison's study, it may vary among the clients and beneficiaries implying what is quality indicator for teachers may, or may not be, the quality indicator for parents. Let us pursue the input-process-output paradigm to derive some indicators of quality.

One important way of identifying indicators of quality is to use systems approach and identify the components of input, processes and output. The major problem in classifying 'indicators' of quality is the interdependence between process and product in the context of TQM. For example, is satisfaction in the job an input or process or product? On the one hand, job satisfaction is a product of work environment and job condition. A satisfied teacher is likely to make better efforts at teaching, examination and other school activities. Thus, job satisfaction as a product will influence the process of instruction, hence, it is an input. A hard and fast mechanical classification of indicators into input-process-output may not be the solution to all situations. These can, however, be used as checklist to derive the indicators of quality.

In one of the workshops on quality management in schools, the participating senior educational administrators cited the following as indicators of quality:

1. Discipline and punctuality of students and staff;
2. Cleanliness and up-keep of the school campus;
3. Excellence in academic achievement;
4. Excellence in non-academic achievement; and
5. Organizational climate and satisfaction of the customers.

The emphases on all the five components are on the outcome – excellence in academic and non-academic activities are tangible and overt, whereas outcome in discipline, punctuality, cleanliness, and job satisfaction are intangibles and covert. There is another way of looking at it. Punctuality, discipline, cleanliness or a healthy physical environment is pre-requisite to planned instruction that can lead to excellence in performance. Thus, certain dimensions mentioned above are pre-requisites to quality and certain others are the manifest form of quality. From this kind of a stance, quality is built on certain foundations and these foundations are as important, if not more, as the known indicators of

quality. Hence, the first stage is to clearly define the indicators of quality, as far as possible, in measurable terms. The quality of students, teachers, (leadership qualities of the) principal, physical infrastructure, instructional resources, financial resources are some of the examples of input for quality.

Similarly, the quality of classroom and out-of-the-classroom instruction, student assessment and examination, co-curricular activities, office management, and linkage with outside agencies are some of the indicators of quality vis-à-vis process of schooling. Performance in external examination, zonal, district, state and national level sports and other such co-curricular activities, staff morale and satisfaction on the job, etc., are the indicators of quality vis-à-vis product of a school. What is really necessary is to develop and/or adopt a comprehensive institutional assessment system that covers comprehensively all aspects of an institution. Further, such an assessment system should include both qualitative and quantitative methods of assessment (Figure 6.1).

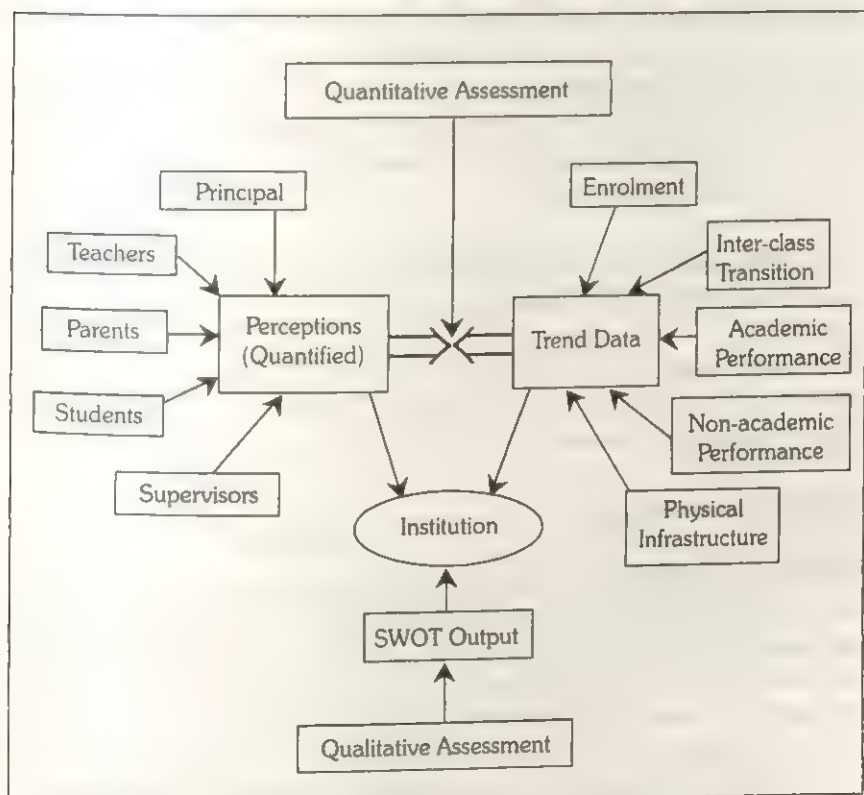


Figure 6.1 Mukhopadhyay's Institutional Assessment System

The MIAS covers perceptual areas, like --

1. Leadership;
2. Teacher quality – preparation, competence and commitment;
3. Linkage and interface – communication with the environment;
4. Students – academic and non-academic quality;
5. Co-curricular activities – non-scholastic areas;
6. Teaching – quality of instruction;
7. Office management – support services;
8. Relationship – corporate life in the institution;
9. Material resources – instructional support;
10. Examination — purposefulness and methodology;
11. Job satisfaction – staff morale; and
12. Reputation, etc.

These are measured on rating scales developed separately for teachers, principal, students, parents and supervisors.

Similarly, the trend data covered in MIAS are:

1. Class-wise enrollment with break up for girls and boys;
2. Inter-class transition rate;
3. Performance including excellence in academic areas;
4. Performance in non-academic areas; and
5. Physical infrastructure.

Trend Data are for five years. Quantitative assessment is supported by qualitative assessment through SWOT analysis. (details of which are given later).

The MIAS covers almost all aspects of a school. It is, however, built on the indicators considered important in Indian condition. The MIAS has also developed tools for assessment, scoring keys, etc.

Tools for Assessment

It is often construed both by head of an institution as well as the academic and non-academic staff of a school that they know their institution. Practical experience is different, however. There may be some core commonality of understanding, but each member of the institution possesses an unique perception of the school depending largely upon the personal values and beliefs that he/she carries to the school. In a qualitative exercise, I asked seven teachers of an institution, who had spent between seven to twenty odd years there, to write an essay on their institution in about 500 words. Although all of them

claimed that they knew their institutions in and out for several years, they indeed wrote different essays. What they had were a set of perceptions, beliefs and values that varied from one member to another; obviously, they differed. Hence, formal assessment of an institution is necessary.

In order to develop a more objective viewpoint of the institution, particularly for diagnosing the strengths and weaknesses, it is necessary and important to use a scientifically developed assessment instrument. There are several instruments developed to assess institutions. The evaluation instruments accommodate various dimensions of an institution that are identified as indicators of quality like organizational discipline and cleanliness, performance of students in academic and non-academic areas, instructional processes, job-satisfaction of the staff, reputation, work-culture, etc. Schools desirous of assessment can either use a readily available standard instrument or it can design and develop the assessment instrument in-house. Whether you use a readily available instrument or design one specially for your institution, you must specify the areas of measurement or areas of assessment, then develop assessment questions on each area.

There are several instruments for assessment of institutions. As mentioned earlier, Government of Maharashtra, Department of Education has developed an instrument. Johnston County Schools Total Quality in Education (Frazier, 1997) is another such example.

We will present here the instruments in the MIAS, namely --

- Teachers' Questionnaire: *Mukhopadhyay's Institutional Profile Questionnaire (MIPQ)*
- Principal's Questionnaire
- Students' Questionnaire
- Parents' Questionnaire
- Data and Information Blank

Mukhopadhyay's Institutional Profile Questionnaire (MIPQ)

MIPQ has been widely used for generating institutional profiles. Although MIPQ is largely used to elicit teachers' perception, it has also been administered on the principals and non-academic staff. MIPQ comprises eleven areas that are considered as indicators of quality. These areas are:

1. Leadership;
2. Teacher quality – preparation, competence and commitment;
3. Linkage and interface – communication with the environment;

4. Students – academic and non-academic quality;
5. Co-curricular activities – non-scholastic areas;
6. Teaching – quality of instruction;
7. Office management – support services;
8. Relationship – corporate life in the institution;
9. Material resources – instructional support;
10. Examination — purposefulness and methodology; and
11. Job satisfaction – staff morale.

The list indicates inclusion of input indicators like leadership, teacher and student quality, material resources; process indicators like leading, linkage and interface, teaching, co-curricular activities, office management, examination, etc.; and product indicators like job satisfaction, relationships, etc. It is implicit that these are critical success factors for quality.

This list takes basics like discipline, punctuality and upkeep of the premises for granted. The major difference in this case, however, is the emphasis on process – process of leadership, teaching, co-curricular activities, examination, office management, etc. It also includes the issue of quality of vital inputs like teacher quality, students, instructional resources, etc. It also includes within its ambit, intangibles like relationships, satisfaction on the job, linkage with the outside world, etc. The fundamental assumption is that an institution that is strong in all or most of these areas is a quality institution. Excellence in academic and non-academic activities as outputs that are missing in this list are presumed to be automatic products of a good institution (Deming's argument). These are, however, covered in the information blank.

The MIPQ consists of 110 items – 10 items on each area of an institution mentioned above. Out of the 10 items, five are positively keyed and five are negatively keyed. For each respondent, for each area, the scores in positively keyed items are adjusted against the responses to the negatively keyed items. Hence the summated score in each area can be positive or negative. Respondents are asked to respond to each and every item by checking out one of the five possible responses, namely, Very True (VT), Largely True (LT), Partly True (PT), Not Sure (NS) and False (F). For the purpose of scoring, a numerical value of 4 to 0 is attached to each category of response – the actual value depends upon the item, whether it is positively keyed or negatively keyed. In Table 6.3, an example is given on scores vis-à-vis response to a positively (+) keyed item and a negatively (-) keyed item.

Table 6.3. Sample scoring plan for positively and negatively keyed items

Item	Keyed	VT	LT	PT	NS	F
Teachers do prepare before teaching <i>(preparing before teaching contributes to good teaching, hence a positive feature)</i>	+	4	3	2	1	0
It is an isolated institution <i>(isolation deprives a school from understanding expectations from outside as well as learning innovative practices, hence a negative feature)</i>		4	3	-2	1	0

With ten items – five positively and five negatively keyed, each area can have score ranging from maximum 20 ($5 \times 4 - 0 \times 5$) to minimum of -20 ($5 \times 0 - 5 \times 4$). The questionnaire, scoring key, and sample tabulation sheet are given in the Appendix. The scores in each of the eleven areas generate a profile of the institution. The MIPQ measures largely the perceptions of teachers about the selected areas of an institution. Organizational ethos and satisfaction is a matter of perception. Let us take an instant case to illustrate what MIPQ offers. The scores of nine teachers of a school on each area has been tabulated in the sample scoring sheet. The average score in each area has also been worked out.

Table 6.4 Sample tabulation sheet

Respondents \Rightarrow Areas \Downarrow	1	2	3	4	5	6	7	8	9	Average
Principal	8	6	5	3	2	7	5	2	4	2.44
Teacher	10	7	9	6	11	5	7	8	6	7.67
Linkage	5	2	2	3	5	2	0	3	2	0.67
Students	7	5	8	6	5	7	3	6	6	5.89
CCA	9	5	7	4	3	2	4	6	3	3.22
Teaching	7	4	9	6	3	6	4	5	1	3.00
Office	-3	5	0	1	4	6	4	5	-4	-0.22
Relation	8	7	9	6	8	7	6	9	11	7.89
Resources	5	8	4	4	3	6	4	2	6	2.44
Examination	6	9	11	5	7	5	9	3	8	0.78
Satisfaction	10	8	6	9	5	9	6	7	7	7.44

The tabulation sheet indicates several trends --

- In each area there is wide divergence in the perception of teachers, e.g. +8 to -5 on principal as leader.
- There are divergences among the areas, e.g. from a maximum average score of +7.89 in relationships to -0.22 in office management.
- Inconsistencies like good teachers as indicated by a score of +7.67 but not so good teaching by a score of +3.00 only.
- There are apparent relationships between two or more areas, e.g. relatively high scores of 7.89 and +7.44 in relationships and satisfaction.

In order to define a crude cut off point/score to label areas as weak or strong, an institutional average score point is calculated by averaging the averages of various areas. In the instant example, 3.75 is the institutional average score. All areas with scores above 3.75 are stronger areas and all below that are weaker areas.

Table 6.5. Average scores in sub-areas of MIPQ

Areas	Scores: <3.75	Scores: 3.75 +
Principal as Leader	2.44	
Teacher Quality		7.67
Linkage	0.67	
Students Quality		5.89
Co-Curricular Activities	3.22	
Teaching	3.00	
Office	-0.22	
Relation		7.89
Resources	2.44	
Examination	0.78	
Satisfaction		7.44

The averages when plotted in a graph provides the following graph.

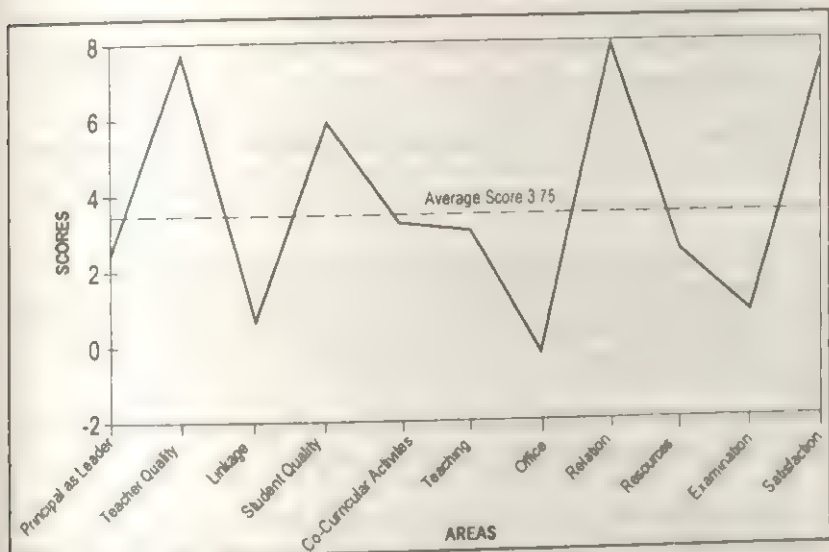


Figure 6.2. Organizational profile

The graph categorically illustrates the stronger and the weaker areas of the school and also indicates their relative position among each other

It is also possible to use a set of instruments for measuring various dimensions of schooling. There are, in fact, standardized tests on teacher morale, job satisfaction, organizational climate (Pareek and Rao, 1974, and Pestonjee, 1997), classroom teaching competence measurement scale, etc. These questionnaires or tests can provide meaningful indications about the overall satisfaction of the staff.

MIPQ is an easy-to-use instrument. It has been used in a large number of educational institutions for organizational diagnosis. The instrument can be administered on teachers, non-academic staff, students and supervisors. Each category of respondents will generate different profiles because of their differential perceptions of the various aspects of the institution.

Other Questionnaires and Information Blank

- One of the questionnaires is for the principal, seeking his/her own perception in areas like punctuality, relationship with teachers, decision-

making, accessibility, his/her approach to management, etc.

- The second questionnaire is for the students — their perception about discipline, support systems, human relations and standards of academic and non-academic activities.
- The third questionnaire is for the parents seeking their views on discipline, reputation, teachers' attitude towards students and parents, accessibility to teachers and principal, etc.
- The Information Blank deals with factual information and data on enrolment, transition rate, performance in academic and non-academic activities, resources and facilities — physical infrastructure, financial resources and staff.

The scoring keys for each of the questionnaires for principal, students and parents are given along with the questionnaires in the Appendix.

It would be evident that the instruments are designed to measure both facts and perceptions. Punctuality, discipline, reputation, professional support, relationships are elements of perceptual measures. Excellence in achievement, enrolment, resources, etc. are factual and data based. Data over the last few years can be used profitably to derive the trend of development. The various areas where data based assessment can be meaningfully used are:

- Enrolment in the institution,
- Academic achievement – inter-grade transition rate and excellence,
- Performance in co-curricular activities,
- Utilization of library,
- Inventory and utilization of physical infrastructure,
- Inventory of audio-visual aids, and their uses, etc.

In this set of instruments, similar questions are asked to more than one category of respondents. For example, the questions on the state of the discipline in the institution are asked to the students, parents, teachers and the principal. In an institutional setting, the same issue can be perceived differently by different category of respondents. Hence, assessment through multiple sources, called triangulation, is an important means to achieve relatively objective status on the issues.

Most of the items in the Questionnaire can be responded either on a four or a five point scale. The scores can be summated to find the sub-total in an area. More than the quantitative aspect, however, what is important is to get the

qualitative view of the situation so that the basic purpose of assessing institutional strengths, and weaknesses can be achieved easily.

Although the first assessment provides the base-line survey, what is really required is the trend analysis over a few years. So, even at the first instance, the data on such items should be collected for five years. The data will indicate the trend of either growth or decay or stability in each aspect of performance of the institution.

Qualitative Methods: SWOT Analysis

One of the major qualitative methods in organizational assessment and diagnosis is SWOT – Strengths, Weaknesses, Opportunities and Threats - analysis (Mukhopadhyay, 1989). This is basically a participative technique for organizational diagnosis whereby members of an organization collectively decide, rather identify their strengths, weaknesses, opportunities and threats. SWOT analysis facilitates answering questions like the following:

1. What are the strengths that can be trusted and built upon?
2. What are the weaknesses that need to be taken care of and improved?
3. What are the opportunities before the institution that can be used to convert into strengths? and
4. What are some of the threats that need immediate attention so that they do not endanger the growth?

There is more than one way of carrying out an organizational SWOT analysis. One relatively simple approach is to create a SWOT sheet, as given below, and ask every member to fill in the sheet with brief one-line statement against serial numbers in each quadrant of the SWOT sheet.

Sample SWOT sheet

Strengths	Weaknesses
1	1
2	2
3	3
4	4
Opportunities	Threats
1	1
2	2
3	3
4	4

The compilation of the responses will simultaneously indicate the convergence as well as the divergence of views among the institutional members. The findings of the first analysis is presented back to the respondents, primarily to indicate the convergence and differences in their perceptions. At this stage the participants are asked to generate a common SWOT sheet. This leads to rigorous discussion. Through discussion, respondents arrive at a consensus regarding strengths, weaknesses, opportunities and threats of an organization.

While there are several advantages of this participative qualitative assessment, there are obvious limitations. For example, in collective diagnosis, very often, the articulate few dominate and over-rule the silent majority who may have equal or better capability of analyzing the situation. Increasingly, we are tending to mix quantitative measurement with qualitative techniques.

Participants in Institutional Assessment

Who would carry out an institutional assessment? This is a delicate question, particularly, in the Indian cultural milieu in which the schools are set. The predominant hierarchic culture in educational institutions is an obstruction to participative assessment as much as participative assessment is a danger for hierarchic culture of the organizations. TQM, in particular, emphasizes on involvement of all – from assessment, diagnosis to development and quality improvement. Hence, choice of respondents and participation of all or many are important pre-requisites.

In an average institution, institutional assessment is absent; if at all, anything matters, it is the principal's perception. For scientific assessment, it is equally important to ascertain what others know. Proper assessment depends upon the ground commonly known to the principal and the staff. The case of known and unknown elements of an institution to the principal and others can be meaningfully plotted in the window panes of a JOHARI Window (Luft, 1970):

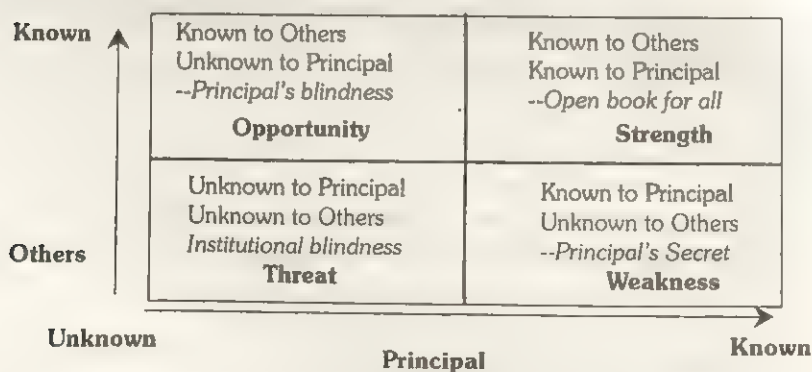


Figure 6.3. Illustrated JOHARI Window on a school

There are four panes of the window. Specific attributes are inscribed in each window pane. The important message in this window is the Institutional blindness as a major threat. Principal's secret as well as Principal's blindness are equally serious weaknesses. However, principal's blindness can be converted into an opportunity if he or she is open to others' views of institutional assessment. With increased participation and sharing, the partition between known and unknown on both sides can move enlarging the 'known-known' window simultaneously reducing the windows with unknown components.

Frazier (1997) suggested identification of internal and external customers, and survey the customers for valid requirements and satisfaction. In the context of Total Quality Management, the focus is essentially on the customer or the beneficiary and hence it is important to list down external customers as well as internal customers of an educational institution. For example, employers, colleges and universities, tax-payers, and government are some of the important external clients of a school. On the other hand, teachers, non-academic staff, members of the executive board and the supervisory staff are the internal clients. Students are the most important clients as they are both external as well as internal. However, in order to make a meaningful assessment, it is important to actually identify the clients or the beneficiaries who can be consulted, whose response can be sought and trusted to assess the performance of an educational institution.

In case of a school, the respondents can be the parents, students, teachers and supervisors and non-academic staff. Should we consider an institution that produces students for employment, employer can also be consulted. For example, the teacher training institutions like DIETs produce trained teachers meant for employment as primary school teachers. Similarly, the colleges that admit the product of senior secondary schools may be able to assess and comment on the products of the school.

There are two guiding principles in the choice of respondents. These are:

- Multiple category of respondents, and
- Multiple respondents from the same category.

Depending upon the size of the institution, the instruments can be administered to all or sampled respondents. Let us take the case of teaching staff only. Should the size of the teaching staff be less than 30, it is worthwhile involving every one. Should the size of the staff be large, say more than 75, a sample of them can be taken. There are several ways of sampling. Two most important ones are:

- a. Index names of all staff members alphabetically. Choose every 3rd or 5th or 10th so that total number comes to about 30.
- b. The second alternative is to categorize staff into certain meaningful categories, like --
 - Female/Male
 - Experience, say, less than 5 years, 6-10 years, 10-20 years, 20 or more years
 - Age, say, less than 30 years, 30-40 years, 40-50 years and 50 years or more
 - Subject specialization
 - Nature of job (only academic or academic administration (head of department)).

Select the respondents in a manner that every group is well represented in the sample. For example, if there are 60 women and 40 men in the staff and you decide to have 30 respondents, choose 18 women and 12 men. Then take experience – choose 18 women in a fashion that they represent different cohorts of years of experience.

It is important to note that on several areas more than one category of respondents can respond and should do so. For example, students, teachers, and head of the institutions as well as parents can assess the issue of discipline and quality.

The same procedure can be followed for other categories of assessors like non-academic staff, parents, employers, students, etc. The basic principle is to involve all categories of clients who have either a stake in the school and/or who pay for the schooling.

Administering the Tools

There are just two ways – either you hand over the tools to the sampled respondents and they respond leisurely, or call them at a place and time, and administer the instrument then and there, and collect the response sheets. Since respondents will primarily express their perceptions and not facts, it is wiser to administer in a group at a pre-decided time and venue. Also, your instruction should contain a statement like 'please do not brood over any item for long; respond quickly and record the first response that comes to your mind. Do not consult one another. You may or may not write your name, but be frank about your assessment on each item.'

Quantitative versus Qualitative Analysis

Each questionnaire comes with a scoring key. Using the scoring key, the average score of the staff of an institution in all the component areas of an institution can be found out. A sample data sheet on MIPQ followed by graph has been given earlier. This provides a profile of an institution. The profile indicates relative strengths and weaknesses of the institution.

SWOT analysis statements can be tabulated under each head – strengths, weaknesses, opportunities and threats. On the one hand, the frequency of the same and similar statements can be calculated; on the other hand, a detailed content analysis of statements can be carried out to assess the trend under each head. However, if the first exercise of individual SWOT analysis is presented and a discussion is steered to consensus, this analysis may not be necessary.

In many of my experiences in organizational diagnosis, I have found it useful to use structured assessment tools like MIPQ, quantify the data and then go for qualitative analysis with or without SWOT sheets. A typical activity sequence of SWOT in such a case is as follows:

Box 6.1. Sequence of activities in SWOT analysis

1. Administer MIPQ
2. Score MIPQ
3. Tabulate and calculate average score on each area of MIPQ
4. Draw the profile-graph
5. Present the graph to the staff – “our collective view looks like this”
6. Allow people to debate and discuss whether this is the real profile or a distorted one
7. Try to draw the discussion towards consensus – “OK, we may not be as weak in co-curricular activities as – 6, but weak we are; should we say we are at point – 4?”
8. Try to derive out of the discussion the points of strengths, weaknesses, opportunities (e.g. high quality teachers) and threats (poor material resources).
9. Allow items not covered in the test, to figure in the SWOT list.

The watchword is acceptability of the assessment by majority of the staff, if not by all.

In fact, till the development of the profile-graph it was quantitative. Subsequent steps are again qualitative. The quantitative method provides a scientific basis to the qualitative analysis.

Use of Assessment Data

There are several uses of the assessment data. The three primary uses are creation of base-line, identifying areas and strategies for intervention, and development of mileposts for future development. Since total quality management is a continuous journey, it is very necessary to develop the base-line against which the growth and development can be compared. Hence, the first use of assessment data is to create a base-line on the status of various items of the school. The assessment of institutions throws significant light on their strengths and weaknesses. Understanding of these strengths and weaknesses provide sound basis for prioritizing areas of intervention for development. Simultaneously, the assessment data also provides clues to the methods of intervention. Just as quality is a continuous journey, so is the case of institutional assessment. The institutional assessment is carried out periodically. This, on the one hand, shifts the base-line; and, on the other, facilitates setting new targets and new mileposts.

Conclusion

The assessment of an institution is not as difficult as accepting the outcome of the assessment. The institutional assessment brings to surface many known but not articulated realities as much as it unveils many unknown elements of the institution. Since the purpose of institutional assessment is not to categorize the institution as 'bad' or 'good', but to understand the relative strengths and weaknesses for the sole purpose of development, it is important to involve as many functionaries as possible in the assessment. And, participative process is the cardinal principle of total quality management. Further, the responses of different categories of people will paint different pictures of the same institution. It has to be understood and accepted that none of the pictures is either correct or incorrect; people perceive the same institution, even the same components of the institution differently. What is important, in the context of quality management, is to understand and acknowledge the perceptual differences and make deliberate efforts to reduce the perceptual gaps.

Participatory Management and Team Work

Introduction

With increasing spread of education, organizations are also becoming increasingly democratized. There are demands for replacements of hierarchically organized bureaucratic systems by horizontal organizations with collegial culture. Besides the emergence of such demands as a democratic movement in organizations, this is also becoming necessary for optimizing capacity of the organizations. In hierarchical system, organizations, at best, can add to the individual capacities, but cannot create productive output through synergy. In a competitive world, synergy is a necessity. Also, participatory management provides exposure and skills to be effective in participatively managed organizations. Teams are both the outcome of participatory process of management as well as instrumentalities for participative management. Participatory management and teams are natural associates of total quality management. Both Deming and Juran strongly argued in favour of participatory management for TQM.

Participatory Management

Participatory management has been construed as characteristic of effective schools. For effectiveness, school activities must be managed by participatory principles (Rossmiller and Holcomb, 1993 and McLenighan, 1990). Several studies indicate teachers' preference for participatory management and dissatisfaction on absence of feedback, autonomy and task related interaction (Frase and Sorensen, 1992). Porter (1990) found that more than 81% respondents in a survey of librarians felt that participatory management increases job satisfaction and 75% indicated that participatory management improve performance.

The principal plays an important role in developing the culture of participation in management. He or she adopts a facilitative style of sharing decision making responsibilities on issues related to school management and administration (Haskin, 1995). Conley and Bacharach (1990) made a strong plea that "a collegiate, professional work environment can only be created by adhering to a participatory managerial philosophy that respects teachers and professionals and decision makers, and considers specific relationships arising between teachers and administrators". Emerging research literature on participatory management in education, both by itself and as part of TQM literature, indicate participatory management as a viable alternative to conventional management (Sheane, 1993).

Participatory Management and Team Building

As mentioned earlier, the three basic principles of total quality management are (i) quality as a never ending journey or consistency of purpose; (ii) client orientation and focus; and (iii) involvement of all – participatory management in collegiate model and environment. "Team-work throughout any organization is an essential component of the implementation of TQM for it builds trust, improves communication and develops independence" (Oakland, 1989). Murgatroyd and Morgan (1993) argued that to implement TQM, an organization has to be a learning organization, and it is necessary to build teams in order to become a learning organization. The role of teams has been specially highlighted in the context of total quality management.

The building of a learning organization requires sharing, testing and refining learning. Team provides an important platform where new learning can be articulated, tested, modified and refined and finally examined for the real value of learning. In this context, it may be worth remembering the classification of learning into maintenance learning and innovative learning by Club of Rome Report, *No Limits to Learning* (Botkin, Elmandjra and Malitza, 1979). The maintenance learning equips us to solve known problems through known ways. Innovative learning is expected to equip us with methods of coping with and solving problems so far unknown. The report argues that we know how to deal with wars with conventional weapons, but human society is almost clueless as to how to deal with nuclear war. When teams, as learning organizations articulate, challenge, test and refine learning, they are trying either to cope with solving problems unknown to them or solve known problems through methods unknown so far. Thus, it offers a framework for innovative learning. Secondly, in a learning organization, the needs of individuals are better articulated in teams as much as needs of teams are reflected better within the organization and needs of the organization in the larger context of the needs of the society.

Thus, it is the teams that integrate individual needs with the societal needs through teams and organization.

Peter Senge (1990) differentiates between impact of individual learning and team learning. In his view, 'individual learning, at some level, is irrelevant for organizational learning. Individuals learn all the time and yet there is no organizational learning. If the teams learn, they become micro-cosmic for learning throughout the organization. Inside gains are to be converted into action. Skills developed can propagate to other individuals and to other teams. The team accomplishments can set the tone and establish standard for learning together for the larger organization.

Murgatroyd and Morgan (1993) argues that teams are self-managing. If not to begin with, teams learn to set their own goals, own methods of working, assessing the achievements and failure, they thereby become autonomous. This form of autonomy and self-managing is the seed of the process of continuous quality improvement and self-renewal. As the teams develop the skills of self-renewal, the institution becomes a self-renewing organization. The quality journey is safe in such organizations.

Further, educational institutions have several diverse functions. Though teams concentrate primarily on one area, they are affected by other functions in the institution. For example, a team of teachers innovating on science education will be influenced and affected by the team working on student assessment and evaluation. The teams have the advantage of examining issues across various functions, for they are not only inter-related but are also interdependent. There are a number of studies on management of change (Mukhopadhyay, 1989) that indicate that innovations and change in education, in a large measure, are dependent upon the qualities and style of the principal. As a result, institutions grow and decay with the incoming and outgoing of one individual – the principal. The concept of self-renewing organizations is to develop the process of renewal, irrespective of the individual as head of the institution. The sustainability of change is tied down to independence from individual dependence. Transformational leadership and teams are the best bets for continuous improvement.

There are, and there can be, several forms of teams in educational institutions. One such team is the project team formed around a project. A project is a time bound activity. It is intended to solve a problem or develop a new product or process. Projects have well defined methodologies, resources and time frames

to accomplish the goals. It is comparatively easy to measure the successes and failures. Project teams can undertake small or large projects. Sallis (1996) argues, "Ad hoc and short life project and improvement teams are key elements in the delivery of quality improvement. Teams have the added advantage of involving maximum number of people in the total quality process. Teams become the engines of quality improvement."

The success in projects provides: (i) improvement in one of the functions or sub-function of the institution; (ii) locally applicable project methodologies for other teams to use; and (iii) motivation creates examples for others to emulate. Being small, even if the project fails, it does not seriously affect the organizational quality. But the trick is to design a series of small projects that are easy to achieve; they can add up to something substantial for the institution. Should the projects be planned properly with some commonality of purpose and focus, and even with marginal overlaps, these are potent to bring in qualitative improvement in many areas of the institution.

Let us take an example:

A group of three teachers teaching social studies in three sections of grade VIII or in three grades, say VI, VII and VIII decide to deal with 10% of the syllabus through presentation of seminars by a team of students. They jointly identify the topics and prepare the students. Students present seminars. They, either as a team or individuals depending upon their engagements in the timetable, observe each seminar. Wherever necessary they also assist the team presenting the seminar. At the end they administer a pre-designed test on the topics presented through seminars. They also review the experience with the students and amongst themselves.

They may find that students learn better; they are more interactive with their peer seminarians; they feel motivated to prepare well for the seminar; they enjoy the sessions; etc. Teachers may find that it was a new experience to prepare students for the seminar; it was different from the normal classroom management; students actually fared better through this method than their own teaching. The project can be extended, modified and disseminated to other teachers.

However, compared to the project team approach, most institutions practise course team approach. Miller, Dower and Inniss (1992) saw course teams 'acting as conduit of information to management on changes necessary to improve provision'.

Whereas the academic departments are responsible for transacting the academic curriculum, others are responsible for: (i) time tabling (thus using time of the teachers, and the non-teaching staff like laboratory assistants, etc.); (ii) use of audio visual aids and other instructional resources; (iii) quality of instructional processes; and (iv) may be, marginal supervision and monitoring. Together, they form course teams. There are yet other possibilities where teachers of different subjects come together to deal with a subject, like environmental education.

There have been some interesting experiments in forming teams-structuring of the organizations in matrix format for quality improvement. The Technical Teachers' Training Institute, Bhopal, set up for training of technical teachers is a good example. The institute has a department each in civil, mechanical and electrical engineering, education, and educational management. There are several other functional areas in a teacher training institution like student evaluation, research, audio and visual media, curriculum development, etc. In this institute, the discipline areas are organized as departments with a designated head. The functional areas are organized as task forces with one elected leader. These are the two axes of the matrix:

Table 7.1. Matrix structured organization

Task Areas ⇒ Departments ⇓	Curriculum Development	Media	Evaluation	Research
Civil				
Mechanical				
Electrical				
Management				
Education				

Appointments to the departments are through formal selection process. They are designated as professors, readers and lecturers. The membership to task forces are open to all members of the staff, they can choose any two task forces and participate. Thus, for example, task force on educational research will

comprise persons from education, management as well as engineering departments. While the departments took charge of routine functions like course planning and execution, task forces undertook innovative projects in their respective task areas. Since the membership of each individual faculty member was in two task forces, each task force were fully aware of the activities and experiences of other task forces. Besides developing teams on areas of common interest, inter-disciplinarity became the feature of each functional area in the institute. Also, it provided opportunities for leadership development who are not designated so, e.g. heads of departments by official procedures.

Experience bears out that matrix structure facilitates team building, and by its nature, it extends participation of staff in several areas of organizational functioning.

Diversity of Roles in Teams

Just as a team comprises several members, it also comprises several skills as well as role expectations. Some of the comparatively more acceptable roles identified by Mergerison and McCann (1985) are:

Informing or Advising — One of the important roles is to gather and disseminate information relevant to the work of the team. To ensure that the team has all the necessary and relevant information, it is necessary to develop a mechanism for identifying and retrieving information from various sources.

Innovating — The second role is to innovate and create new ways of thinking and working to accomplish new and so far unknown tasks as well as old tasks in a more cost effective manner.

Promoting — The experience in the field of innovation and management of change indicates that many good ideas are lost even before they are tried out. There are competent members in the team who would give a trial if they knew it. Many a time an idea or an innovation gets lost because it remains unknown to the potential adopter. It is, hence, important to communicate and promote ideas within the team members so that the ideas may not get lost¹.

¹ Eminent educationist, Late Professor M. B. Buch, known as an innovator, used to mention the same novel idea to a lot of people – his colleagues and students in position. He used to choose to communicate to only those who are receptive to new ideas and are adventurous enough to try. On asking why does he say the same thing to so many people, he explained that what was most important was the idea – its survival and trial. If an idea is planted in several minds in several institutions, some one may pick it up and the innovation may survive.

Developing - Innovation may be a crispy idea. Before it is implemented, it needs processing — identifying its detailed components as well as methods of implementing each component with linkage with one another. This will make the innovative idea more implementable. Thus, one role in the teams is developing ideas into implementable form.

Organizing — Another important skill in team building is organizing people, activities and resources so that the plan that is developed is implemented. There are some members who have greater organizing skills. They may have to be used for organizing people and activities.

Producing — Skills and competencies are needed for final production. Some members in the team need to work with the ideas over a period of time to develop the product to pre-defined quality. Further, the product must be documented so that others may learn from experience. Hence, another related skill to production is documentation.

Inspecting — Inspecting, in this context, actually means monitoring of quality assurance. As TQM emphasizes on continuous quality improvement, quality assurance mechanism becomes important. Inspecting is an important skill that is required in a team to ensure quality of the process and the output.

Maintaining — Teams need to maintain for survival as well as for long term goals, both activities and the cohesiveness of the team. Someone is needed in the team who not only can maintain the activity level as per the plan but also can maintain the team and the team spirit so that the team as a whole moves forward.

Linking — The major challenge before the team leader or the coordinator is maintaining positive linkage among all members of the team over a period of time. When a project is planned, executed and evaluated, members share mutual responsibilities. It is only through the linkage and understanding of interdependence that this mutual responsibility can be discharged properly and the task accomplished.

Development of Teams

Teams do not develop instantly. It has a long process of development from incubation to maturity. Further, the development road-map for a team is not necessarily trouble free. It has its own ups and downs. Let us get back to the case cited earlier on creation of task forces in TTTI to delineate the stages of team building. Task forces are non-hierarchic. Participation is voluntary. Each task force had membership from various departments and they did belong to

different levels in the professional career - Professors, Readers and Lecturers. The first stage when the task forces are announced and people are invited to join, individuals think of their personal interests, their competence and also who else are likely to join a particular task force. On the basis of these considerations, they submit their preferences and the task forces are formed.

It is interesting to watch the proceedings of the first two-three meetings of the task forces. Everybody has a viewpoint as to what should be done and what should not be done. What is in the best interest of the Institute? What is in the best interest of the task force? How should people behave? How should the activities for the task force be chosen and in what way they should be carried out and so on and so forth? From these few initial meetings, there is hardly any tangible output. What really happens is generation of lot of ideas, challenging and verification of ideas, mutual understanding of group members – their values, beliefs, styles of communication, cognitive and non-cognitive styles and qualities. In effect, these meetings lay the foundation for formation of teams out of discrete individual scholars.

After a couple of initial, apparently useless, meetings, the task forces sit down to decide who will lead the group. More often than not, the leadership does not go by the hierarchy. It goes more or less by the way someone is acceptable both academically as well as for his or her ability to provide direction and carry people along. Besides choosing the leader, the group develops certain norms and practices in terms of charting out the areas of activities, the working methods and roles of each individual.

At the next stage, the group starts identifying actual projects that it wants to undertake. Initially, a good number of projects are identified. These are prioritized and screened in terms of feasibility. They start working on the projects. From time to time in the meetings, they exchange information on the status of projects and collectively review.

This four-stage development coincides more or less with Truckman and Jemsen's (1977) four-stage process of forming, storming, norming and performing (Figure 7.1). At the fourth stage, rather beyond this fourth stage, team stands at crossroads; it has to decide to conform to carry on the activities or transform whereby, the team looks for new ways of doing old things and also doing new things in new ways.

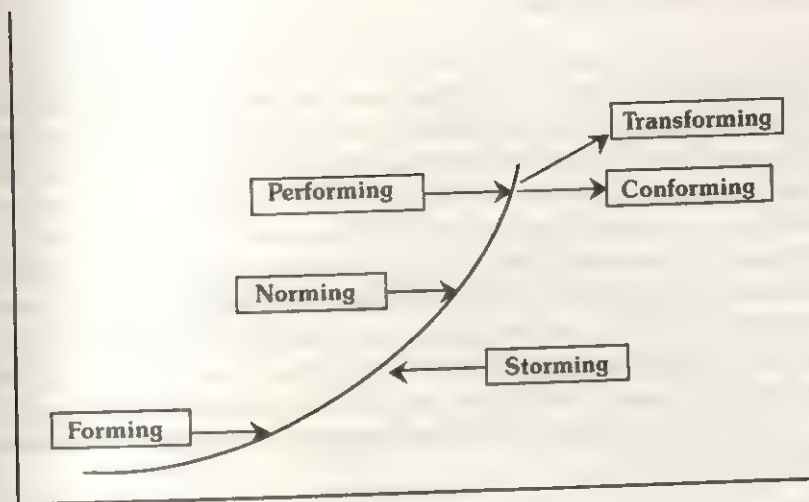


Figure 7.1. Stages of formation of team
Source: Truckman and Jemsen (1977)

In fact, more often than not, at and beyond the performing stage, the teams get into the trap of conforming rather than transforming because transforming requires a new cycle of storming, forming and performing. In conforming, the very purpose of teams as building blocks for quality management gets lost. For Total Quality Management, teams have to be transforming on a continuing basis. From that angle, development of teams is a spiralling phenomenon (Figure 7.2) rather than a linear curve.

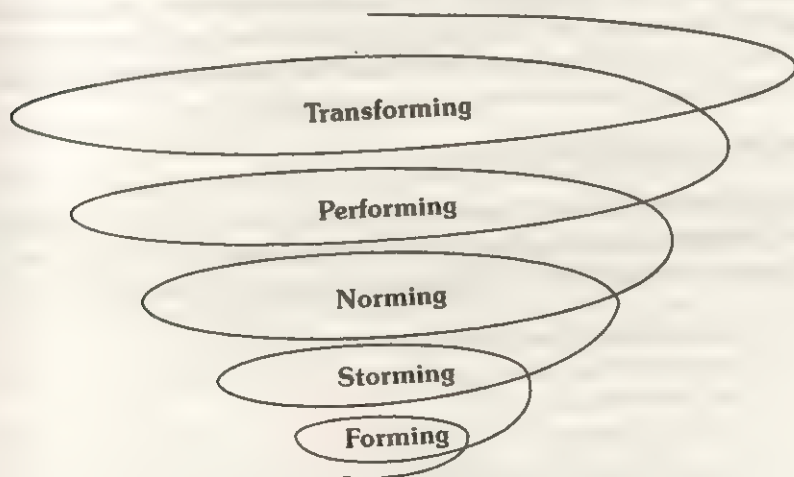


Figure 7.2. Spiral curve of team formation

Maturity and Self-direction

Team takes time to mature. As it goes through the process of development, it learns many new skills and also counters many new problems on the way. It is both failure and success experiences of the processes and products that contribute to the maturity of the team. The maturity is indicated by its capability of self-learning and self-direction. As and when the group learns from its experience and corrects itself to ensure achievement, it is on the path of development. According to Murgatroyd and Morgan (1993) team maturity is the basis for self-management and self-direction. This approach leads groups to self-direction. There are some outstanding examples where an institution maintains its output as well as quality without either a head or a deputy head for months and years. In such cases, the groups and the teams have learnt to direct themselves. This is an important requirement of team development particularly for TQM.

Training

Finally, the teams also need training for team-work. As would be evident from the discussion on the foregone pages, the teams are not only important but are also necessary for quality institutions. Just as the teams have to invest on development and enabling of the individual members, the TQM institutions also need to invest on training in team working. There are several alternative ways of organizing training for team-work. The best possible way is on the job training where teams can review their experiences and learn from that. The foundation stone of team building is mutual understanding, recognition of each others' strength, and mutual respect. For on the job training, the teams need to develop a culture of open discussion where the members feel completely free to discuss, without the fear of conflict and misunderstanding. Experience bears it out that working with the trained and skilled intervention specialists also helps teams to develop team spirit and team cohesiveness further.

Effective and Ineffective Teams

Teams by themselves are not panacea for all ills; central idea is the effective teams. Across literature, there are some common criteria that determine team effectiveness. Woodcock (1979) provided a list of nine characteristics, namely,

1. Sharing Mission and Vision;
2. Open Communication;
3. Trust And Mutuality;
4. Creative Conflicts;
5. Appropriate Working Methods;
6. Appropriate Leadership;
7. Review and Reflection;

8. Empowering Individuals; and
9. Linkages with other Teams.

Morgan (1993) adds fun and celebration of successes and failures as two other characteristics of an effective team. Should we superimpose Woodcock's and Morgan's contribution to our experience, the following attributes sharply differentiate an effective team from a relatively ineffective one:

- Mission;
- Ambiance: Equality or Collegiality;
- Open Communication;
- Trust and Empowered Membership;
- Power Based Leadership;
- Working Methods;
- Linkage outside the Team; and
- Celebrations.

Mission

Vision is the backbone of institutional development. Missions and goals are deduced out of the vision. We have discussed vision, mission and goals in detail in the context of TQM (in the chapter on Transformational Leadership). Sharing of vision and mission has serious implications for team building. Just as the principal needs to have a vision, it is equally important for him/her to share the vision with the staff and thus develop a shared vision for the institution. By developing shared vision, mission and goals, individuals come together and own the vision, mission and goals. Well stated and shared mission works as lintel among the team members. This is evident in projects where individuals team up in time-bound manner to achieve a mission. A mission is an important input to team building. It binds people together in a team; the team becomes focused and the members can move together.

Ambiance: Equality and Collegiality

Teams are conglomeration of equals. Hierarchic structure often works counter to the mission. Effective teams not only believe in equality of members but also depict the equality and collegiality in practice. In the case of a matrix structure mentioned earlier, there was no restriction to the official designation of the person for the leadership in the task forces; often it did not go to the senior-most among the members. There are occasions where a lecturer leads the task force comprising several professors and readers.

Open Communication

Another characteristic of an effective team is open communication where every member feels free to express his/her views. In fact, it is when the open communication is established, the articulation, review, examination and

refinement can happen. One of the major dangers to team work is concealment of facts and information. Open communication reduces the possibility of concealment of information by those who have. This is important since the team itself has a goal and each individual is to contribute towards that – indeed, the way the beavers work in case of breach in a dam (Blanchard and Sheldon, 1998).

Open communication can also lead to conflicts. The word 'conflict' has incidentally a negative connotation, but conflicts are also sources of new ideas. The intellectual conflicts in the teams can lead to creative ideas and new ways of working. Instead of pushing the conflicts under the carpet, it will be useful to allow and encourage articulation and resolve them to generate new ideas. Woodcock (1979) gave a positive orientation when he used the terminology, 'creative conflicts'.

The third aspect of open communication is fearless review and reflection on the functioning of the team –the output, the experiences and the feelings. Just as an effective team decides its roles, working methods, it is equally responsible for its an implementation. There can be roadblocks on the way. Effective teams are conscious of the possibility of roadblocks and failures. They, hence, make it a point to reflect and review the group working from time to time, so that mid-course corrections may be carried out through revised planning.

Trust and Empowered Membership

Members of a team must have mutual trust. This is necessary since they work towards one set of goals. Effective teams, however, allow arguments, disagreement and contradictions. Yet, the members usually show mutual trust and respect for each other. They evince the culture of 'agree to disagree' on academic matters as well as on approaches to resolving problems with full respect for one another.

Effective teams recognize both the potential as well as contribution of the individuals. It also, hence, recognizes the needs of the individual members. An effective team carefully nurtures individual members for their development. In the process, the teams not only encourage the individuals but also build their capability by exposing them to suitable programmes and on the job training opportunities. The difference in an effective team is that it not only utilizes individuals but also en-capacitates them.

Power Based Leadership

Teams function well only when there is a good leadership available to the team. Since teams are not necessarily in the organizational hierarchy, effective teams do not necessarily use hierarchy as a means of choosing the leader. The members

look at the credibility of the individual and his or her ability to lead the group to accomplish the tasks accepted. In the task forces, mentioned earlier, of the teams, leaders are chosen by the group as a whole. Often, a junior person with enthusiasm and skill of leading and binding the members into a team is chosen as the leader. What is important is to choose an appropriate person as leader depending upon the members, nature of the task and time frame. The leader can function effectively with either authority or power or both. Critical success factor of a leader in teams is his or her ability to use power; for authority (that flows out of official positions) may or may not be associated with the position of the leadership.

Appropriate Working Methods

It is not uncommon to witness acrimonious scenes in the staff meetings in many institutions. Just to quote one rather common instance, a meeting was called by a University Department to discuss the annual plans for the year. The meeting was called formally by circulating a notice by the coordinator along with the agenda items. As soon as people gathered together, the coordinator placed the agenda before the meeting, and handed over to the Chairman, the head of the department to conduct the meeting. Without referring to any agenda items, several articulate members launched personal attack on the coordinator and the Chairperson of the meeting. Other members either kept quiet or added to the complaints by adding their own. On the other hand, the Chairman neither called the meeting to order nor did he articulate anything substantial. He kept on mumbling. The coordinator stood up and left the meeting. Others followed suit when the meeting was actually not declared as closed.

Compared to such meetings, effective working teams have appropriate working methods which are characterized by:

1. Access for all members to relevant information;
2. A time-frame for every activity to be completed;
3. Each member being familiar with the interdependence of activities;
4. A specific responsibility to each individual; and
5. Maintaining good records of the activities and/or discussions.

The working methods can differ from one project team to another, or for the same team from one work situation to another. What is important here is that the team openly discusses the working methods and collectively develops methodologies followed by one and all.

Linkage outside the Team

Teams have been described earlier as building blocks of an organization. The blocks cannot stand independently and still make a building. Blocks must be linked with one another; not just assembled together to make a building; these must gel into one another to develop the strength to withstand the natural calamities. The same analogy can be drawn to educational organizations. Teams must be linked to one another. Effective teams make it a point to link with other teams. As mentioned earlier, there are departmental teams and there are task forces. Unless the task forces on research remain in touch with, say, a team on civil engineering, it is unlikely that they will be able to do research on civil engineering education.

Celebrations

Individuals spend considerable amount of their days and a large part of their lives in the organizations. Hence, besides the academic and professional activities, they need fun and comradeship to make life joyful within the institution. The fun adds spice to the life and strengthens the bonds between the members of the team. While it is not very common but many progressive institutions have introduced things like birthday bash to the teacher, teachers' picnic, going to movies together and such other activities to building fun and comradeship among the staff. These are the actions where people show their feelings which are much deeper than the intellectual aspects of life.

Morgan (1993) recommends celebration of both success and failure. Just as an effective team is open in communication and review and reflect, it should be open to learn from experience. Failing essentially provides an opportunity to learn from the experience how not to fail and build success on failure. Hence, looking at the failure with the same amount of interest and enthusiasm as done to success is an important indicator of effective teams.

Conclusion

Total quality management is essentially participative. Work teams are the instrumentalities of participative processes. For TQM, the first requirement is the conviction that quality cannot be managed alone. It needs involvement of everyone in the organization. The second important understanding is that TQM cannot be accomplished by involving a motley crowd of individuals. It needs purpose-oriented interest groups and teams. There are definite stages of team formation and a set of roles for the individuals in the team. It is important to understand the dynamics of team formation, team building and sustaining teams for achieving total quality in education.

Leading Quality Institution

Introduction

Total quality management is a never ending journey. It is a tryst with quality. It is a passion, a pride (Peters and Austin, 1985), indeed an obsession. It is a journey involving all, with a focus on the clients. The challenge is in creating the passion, the obsession and the tryst with quality involving all in the organization. That whipping up of the passion in the organization, and guiding and carrying all in that journey is the challenge of the leadership in the TQM organization.

Leader is 'someone who acts as a guide' (*New Webster's Comprehensive Dictionary of English Languages*). Hence, the principal, the leader of a school, accordingly, is a guide – guide for quality transformation. Drawing from Case's (1993) analogy of a leader as a venture capitalist and chief coach-cum-coordinator, Westerman (1994) calls upon to turn the conventional hierarchic pyramid (describing organizational hierarchy) "on its side so that the top of the pyramid is on the left and everything else flows to the right" (Figure 8.1). This graphic expression reinforces the idea of the leader as a coach and coordinator; it also ensures flow of direction in the form of mission from the leader (Westerman, 1994).

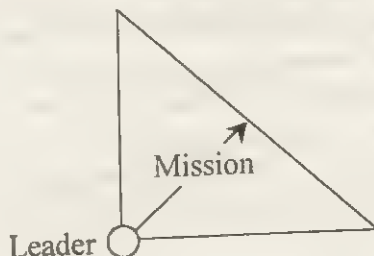


Figure 8.1. Leader as coach and coordinator

The principal is squarely challenged to guide the quality institutions, to create the culture of quality that penetrates to the smallest elements, processes and systems of a school. It is a common experience that under the same set of rules and regulations, with the same set of teaching and non-teaching staff, and students from similar background, an educational institution degenerates or maintains the status quo, or rises to prominence with the change of the principal. Delors' Commission contends, "A good school head who is capable of establishing effective teamwork, and is seen as being competent and open minded often achieves major improvement in the quality of his or her school" (UNESCO, 1996). While ordinary, non-quality institutions, can afford non-leaders as heads, but quality institutions cannot move ahead without appropriate leadership.

Concepts in Leadership

There are some popular well-established concepts associated with organizational leadership. These are labeling of leadership, power-authority grid, styles of leadership with associated concepts like style preference, style flex, style effectiveness, etc.

Leadership Labels

Leadership has been classified into more than one categories. One such categorization is designated versus ascribed leadership. Where leadership position is by designation, e.g. principal of a school, it is a designated leadership. The second category of people who are chosen as leader by the peers and other staff members is called an ascribed leader. Real leader is the one who is ascribed to lead, e.g. office bearers of teachers' associations. The challenges of the designated leader, namely, the principal of a school, is to emerge as ascribed leader, and also mobilize other ascribed leaders in the school.

Comparatively more popular classification of leadership is the trilogy — Authoritarian-Democratic-Laissez Faire. Autocratic leader takes the decision himself or herself and hands it down to subordinates for implementation. Social setting of such institutions is hierarchic and non-colleagual. Democratic leadership style is reflected by consultative decision-making in a comparatively colleagual atmosphere. In such a case, the principal uses his or her position as first among equals; he or she consults others on important matters and takes collective decision. Laissez-Faire leadership is indicated when things are left to happen, often characterized by absence of initiative, absence of intervention, interference, monitoring, etc. However, in another form, Laissez-Faire style is

delegative style; in this case it is not left to chance, but a conscious decision is taken.

Incidentally, in contemporary schools or colleges, there are structural innovations for participative decision making to prevent autocratic style of leadership. For example, creation of staff council, representation of teachers, non-academic staff and parents on school management committees, etc. are some of the structural precautions against the trends of authoritarianism.

Authority and Power

There are two other important concepts related to leadership behaviour. These are authority and power. Although these two terminologies are used interchangeably, these imply different things in the lexicon of management science. 'Authority' flows from official position and 'Power' flows from personal qualities of influencing others. Designated leader can use authority whereas ascribed leaders are power-based. Authority and power, in an organizational setting, are not black and white situations. There is a continuum of more personal influencing capability or 'power' as much as a continuum in the understanding and exercising 'authority'. The zone of overlap (Figure 8.2) between Power

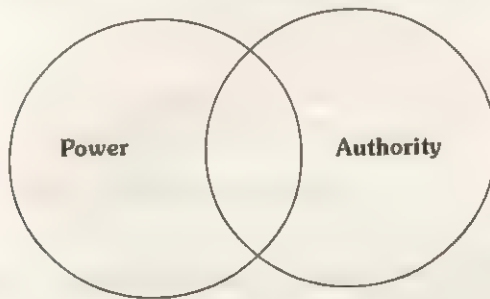


Figure 8.2. Power-authority grid

and Authority is the most effective event of leadership.

Some leaders are high on power but low on authority; they depend much more on their personal influence than official positions. They get most of their tasks accomplished by their followers without invoking official rules, procedures, etc. Some are high on both – they can use power as well as authority; typical of institution builders. Some are high on authority but low on power, usually indicating dictatorial tendencies in management. Some are low on both power and authority – the laissez-faire ones who leave things to happen. The real

question in leading institutions is to develop a mechanism of building on the power element of the power-authority grid for influencing.

Leadership Styles

Hersey and Blanchard (1991), in their proposition on Situational Leadership Theory, identified four styles of leadership based on the combination of the leader's concern for task, and concern for relationship. In their view, leadership style emerges out of interaction of concerns for tasks and relationships. By assigning concerns for tasks and relationships in the two axes, a matrix can be formed. By dichotomizing each into low and high, the matrix offers four possible combinations or four styles (Figure 8.3)

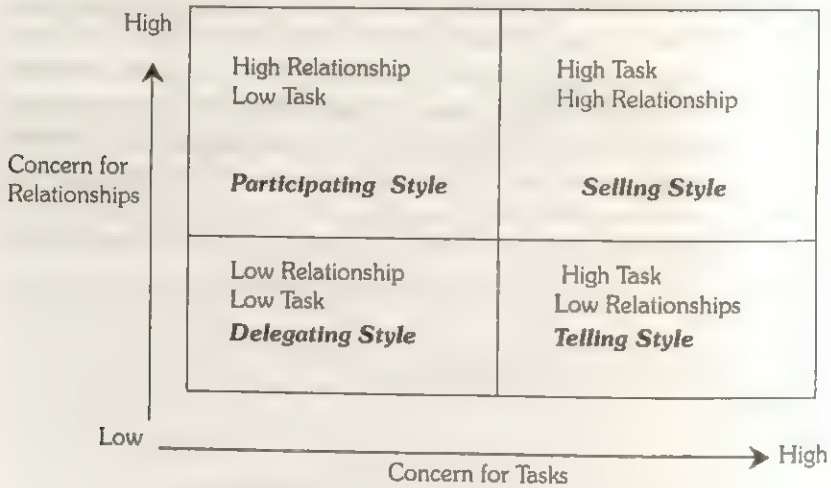


Figure 8.3. Leadership styles

- *Telling* (high concern for task but low concern for relationship): Usually, the leader instructs the followers to carry out a task. Often, he/she specifies the time, method of carrying out the task and the quality of the task output. In this style, the leader is prepared to stake relationship for accomplishment of tasks. In common parlance, this will be considered as the dictatorial style. They are nick-named as 'hard task master'. This style is generally effective with the followers with low task maturity; this style is necessary in dealing with crisis situations.
- *Selling* (high concern for task and high concern for relationship): In this style, the leader ensures task accomplishment with predefined quality and time without staking relationship. The style resembles a salesman who

ensures that he or she sells his or her product and leaves his/her option open to come back with a new product. This is an important style when the principal introduces innovation. Every innovation brings in new risks. Dictatorial style is likely to mutilate an innovation. Hence, he or she needs to maintain relationship so that every one owns the innovation.

- *Participating* (high concern for relationship but low concern for task): This is reverse of the telling style; here the leader stakes task accomplishment for maintaining good relationship. In common parlance, these leaders are called "Mr. Nice man" or "Madam Nice". Here, the leader himself or herself participates in task accomplishment. This is a relevant style when routine, monotonous but necessary work have to be done for the organization, e.g. attendance calculation, tabulation of marks, etc.
- *Delegating* (low concern for relationship and low concern for task): This style is adopted when things are allowed to happen. One description of this style is Laissez-Faire. The other positive description is delegating. There is a difference. Delegating is a purposeful decision, whereas Laissez-Faire is not taking responsibility of anything. Delegating style is most effective when the followers are extremely competent and mature vis-a-vis the task.

Three Concepts associated with Hersey and Blanchard's Situational Leadership theory are Style Preference, Style Flex and Style Effectiveness which are worth mentioning.

Style Preference. Style preference is indicated by the frequency at which a leader opts for one of the four styles. The most frequently chosen style indicates the style preference of the leader.

Style Flex: Style flex is indicated by the flexibility with which one can change and adopt styles as required by a situation to be effective. A leader with strong style flex adopts all the four styles; indeed, he or she moves easily among the styles. This is measured by the number and the frequency of choice of styles by an individual.

Style Effectiveness: Style effectiveness is indicated by the right choice of a style according to the situation. For example, a situation that demands telling style, the leader chooses telling style. This indicates effectiveness. Whereas a situation that demands Delegation, the leader still chooses the Telling style, this will become counter-productive or ineffective.

While these concepts of leadership have significant implications for day to day

management of institutions, leadership in TQM institutions needs a fresh look.

Leadership in TQM Institutions

As would be evident from the analysis of TQM in education (in chapter two), there are three major principles of TQM. These are:

- Client focus;
- Involvement of all; and
- Quest for continuous improvement of quality (not one shot).

One who is anchored into client needs and expectations, can inspire quest for continuous improvement of quality or incite the passion, and who can achieve quality through involvement of all is eligible to lead a TQM institution. Thus, drawing from the three pillars of the TQM, a TQM leader is characterised by.

Client Focus

1. Is conscious of responsibility to clients;
2. Identifies various categories of clients;
3. Is sensitive to their expectations; and
4. Makes deliberate efforts to ascertain and appreciate client expectations.

Involvement of All

1. Inspires colleagues in quest of quality;
2. Involves all in developing the vision and quality management;
3. Empowers colleagues to innovate and take risk;
4. Promotes sense of equality; and
5. Removes bottlenecks.

Continuous Improvement

1. Personally innovates;
2. Demonstrates constancy of purpose towards quality;
3. Walks the talk;
4. Plans long term strategies; and
5. Reviews and resets the systems.

Deming's 14 cardinal principles of TQM have several implications for leadership. While almost all of them have indirect challenge for leadership, some of the principles with direct bearing are such that they:

- create constancy of purpose for improvement;
- adopt new philosophy;
- improve constantly and forever the system of production and service;
- improve quality and productivity, and thus constantly decrease cost;
- institute leadership;
- drive out fear so that every one may work effectively for the company;
- break down the barriers between departments;
- institute a vigorous program of education and self-improvement; and
- put every one in the company to work to accomplish the transformation.

The challenge to leadership in TQM context is adopting a new philosophy – philosophy of quality culture and all other associated processes and systems that ensure generating quality culture. Deming exhorts leaders to create constancy of purpose for quality improvement and create systems for involving every one in the organization in quality management. The most significant challenge is 'instituting leadership' implying moving away from management to leading. It also implies creating and mentoring leadership at all levels.

Similarly, Sallis' (1996) indicators of quality institution also have a series of implications for leadership, such as:

- Has a strategy for quality;
- Has a quality policy and plan;
- Senior management is of leading quality;
- The improvement process involves everybody;
- A quality facilitator leads the improvement process;
- Plans long-term;
- Has a distinctive mission;
- Treats colleagues as customers.

The principal, as a leader, is challenged to develop a distinctive mission with a long term plan with a set of quality policy, plans and strategies. Other important challenges are involving everybody in an environment of equality. Also is the challenge of 'leading from front' and 'walking the talk'. While these set of challenges are derived from Sallis' identification of attributes of quality institutions, he concludes that leaders in TQM organizations should:

- Have a vision of total quality for his or her institution;

- Have a clear commitment to the quality improvement process;
- Communicate the quality message;
- Ensure that customer needs are at the center of the institution's policies and practices;
- Ensure that there are adequate channels for the voice of the customers;
- Lead staff development;
- Be careful not to blame others when problems arise, without looking at the evidence. Most problems are the result of the policies of the institution and not the failing of the staff;
- Lead innovations within their institutions;
- Ensure that organizational structures clearly define responsibilities and provide the maximum delegation compatible with accountability;
- Be committed to removal of artificial barriers whether they be organizational or cultural;
- Build effective teams; and
- Develop appropriate mechanisms for monitoring and evaluating success.

Peters and Austin (1985), on the basis of their research on excellence, prescribe MBWA or 'Management by Walking About' as the style of leadership for quality revolution. The MBWA implies visibility of the leadership and their understanding and feeling for front-line and processes of the institute (Sallis, 1996). In the context of education, they identified, the following attributes of leadership:

- *Management by walking about;*
- *For the Kids* – close to the customer or customer focus;
- *Autonomy, experimentation, and support for failure* – encourage innovation and take risk of failure;
- *Create a sense of family* – sense of belongingness among parents, students, teachers, support staff, etc.; and
- *Sense of the whole, rhythm, passion, intensity, and enthusiasm* – essential personal qualities of a leader.

Spanbauer (1992) emphasized on empowering teachers through involvement in decision making, and delegation of more powers and autonomy as leadership traits in a quality based institution. Chowdhary (1996) distinguished between a professionally managed institutional model with a TQM institution. Professional model places emphasis on the performance of individual whereas TQM emphasizes on system. However, what Chowdhary classified as 'professional'

model is indeed the conventional administered by institution in a hierarchic culture. This model allows and promotes maintenance of status-quo.

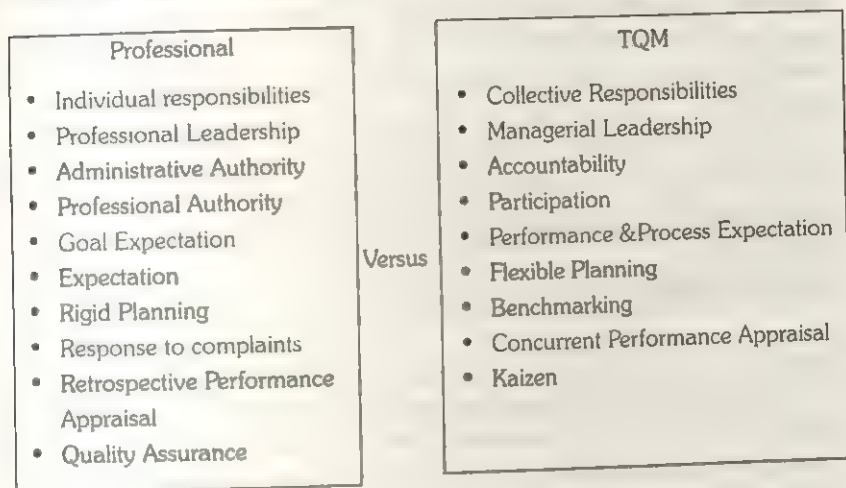


Figure 8. 4. Professional versus TQM model

Source: Chowdhary, 1996

Leading an institution to maintain the status-quo and leading an institution for continuous growth and development are two different paradigms altogether. In the later paradigm where target is continuing self-renewal of the institution, the leadership has to continuously evolve and unfold to its full potential. Hence, the emphasis is on transformational leadership (Frazier 1997, Diwan 2000). Compared to a transactional leadership that works for "maintaining a status quo by exchanging an assurance of a secure place of work for a commitment to get the job done" (Abu-Duhou, 1999), in transformational leadership, the emphasis is on the capacity to engage others in a commitment to change (Burns 1978 as mentioned in Abu-Duhou, 1999). In the context of school-based management which also is the contention of total quality management in institutional context, transformational leadership is necessary to change the culture of the system so that principal and teachers not only share but also commit to the same set of values. Frazier enumerated the following as the attributes of a transformational leadership:

- Creating great vision: Beginning with the end purpose in mind;
- Modelling the values of the vision;
- Trusting and enabling talents of followers: Becoming vulnerable to the strength of others;
- Driving out fear: Creating an environment for learning, and
- Maintaining constancy of the purpose.

The most remarkable feature of a transformational leader is mentoring leadership by trusting and nurturing leadership qualities in others, and/or augmenting the capabilities of ascribed leaders who are not designated to any position. The mentoring of leadership may apparently make oneself vulnerable to others' strengths. But that is a contradiction by itself, a transformational leader is never static on his or her own position. As he or she nurtures new leadership to maturity, he or she shifts his or her own position by inculcating new skills and competencies; moves from manual to knowledge or thinking leadership turning the focus from institutional management to institution building.

Institution Building for Quality Management

Institution building is a continuing process just as quality is a never-ending journey. Institution building refers to capacity building, rather building the process capability of an institution for sustaining the continuing campaign for quality in a competitive environment. It needs vision and sharing of vision, involving and empowering staff, removing road-blocks and encouraging taking risks, creating and developing leadership at all levels. The following are some of the major qualitative requirements of a leader for a total quality institution:

Visioning: If the focus is on continuous development, it must have a direction. The direction will depend upon the vision. In other words, in the context of transformational leadership, the leader must have a vision, must be able to see the end, say, after five or ten years or more. There are certain fundamental requirements in the vision developed for the purpose of institution building. The vision must be developed and initiated by the leader himself or herself. More often than not, the heads of institutions appear on the scene by virtue of their seniority and as a teacher of a particular subject. What they really carry to the chair of a principal is the classroom experience and the subject expertise, whereas the new position requires the understanding of the institution and a holistic perspective. In order to establish source credibility among the followers, it is important that the leader develops his or her vision and initiates action on the vision himself or herself.

As a matter of attribute, vision should be both comprehensive and detailed. This implies that a simple statement will not be enough. For example, one of the institutions very proudly wrote as mission, "institution with a difference". It hardly makes any sense — what is the difference and how that is to be achieved remains unknown. In fact, when we talk to good number of principals, they, more or less, say the same thing "institution with a difference". From the practical point of view, the vision should be comprehensive covering all aspects of the

institution. Along with the comprehensiveness of the vision, vision must be detailed so that this provides a definite viewpoint in terms of what is to be achieved, when, and how. The third attribute of vision is that it is inspiring to others. In fact, these are inter-linked. Unless the vision is possible, it is unlikely to inspire.

Although the vision must be developed and initiated by the leader, it is necessary to share the vision with all those who are likely to be affected, involved and influenced. Through the formal and informal discussions, effective leaders transfer the vision to the followers. While transferring, two different things happen. The leaders themselves accept other's viewpoint and modify the vision. While restating the modified vision, the leader sends a message that it is the vision of all those who interacted with him or her. Followers accept leader's vision. Either way, the leader makes an effort to develop a shared vision and create ownership of the vision among others and thereby creates a 'vision community'.

The vision is often an abstract and creative idea. The empirical evidence bears it out that creativity is not normally distributed amongst people. People are more comfortable to operate on concrete operations level. In order to achieve the translation of the vision, it is important that the leader himself or herself models the value of the vision. Many authors have called it 'walking the talk'. In other words, the leader himself or herself translates in action the philosophical aspect of the vision for others to emulate.

An other important characteristic of a vision is the transparency or what is called inside view of the approach. This implies that everybody can see the intricate relationship between what is preached and what is practised.

Encouraging Risk Taking: One of the major reasons for resistance to innovation and change is the fear of failure. The continuous quality improvement of an institution is in fact a way of continuous adoption of innovation and management of change. Just as every innovation brings in resistance and fear of failure, the continuous effort of change will have continuing fear of failure and a continuing resistance. One of the challenges of a quality management leader is driving out the fear that can be achieved by creating an environment for risk taking. For example, we come across many principals who encourage their staff, particularly younger ones, to undertake projects and innovations and give them the confidence that there is nothing wrong to commit mistakes. They encourage with statements like "do not worry, I am there to take care of the problems". Similarly, another major strategy of driving out the fear is allowing diversity of opinions. For example, we mentioned above the modification of vision. While the leader discusses with others and allows the diversity of opinion, people feel at home to appreciate that they can differ and that difference has a value. This

permissibility and encouragement of the diversity of opinion create an environment where everyone stands to learn. In other words, it transforms an institution into a *learning organization*.

Removing Roadblocks: A related challenge to the leader is removing the roadblocks and tearing out the barriers. On the path of adoption of innovation, there are often several roadblocks and bottlenecks. An entrepreneur of a leader identifies the roadblocks and bottlenecks and tears them down to facilitate the movement for those who innovate. It is a difficult skill. Firstly, it requires perceptiveness to understand the problem that others face or the courage to explore such problems; secondly, it needs a proactive mindset to facilitate others. Thirdly, it is the reverse of the ego-centered management where 'I' is at the center.

Commitment to Change: Kurt Lewin's Field Force Analysis facilitates the understanding of organizational equilibrium. Innovations always upset the stable equilibrium of an organization. A dynamic self-renewing organization is similar to the movement of a see-saw, except that see-saw is fixed at one place, quality organization keeps moving up. While majority of the people would like to come to a stable position, it is the purpose of the leader to indicate the commitment to change and build the momentum for continuing change. The role of the principal is to see that the organization keeps on searching for the new equilibrium moving upwards with every swing of the see-saw. In practical terms, the leader must innovate himself or herself; and also encourage and support colleagues to innovate and take risks.

Empowering Colleagues: Quality being a continuous journey involving everyone, the leader in quality institution invests on capacity building and empowering of the staff. On the one hand, the leader invests on carefully chosen focused training programmes for the staff, on the other hand, he or she fosters culture of equality through colleagueship in contradistinction to hierarchic management in ordinary institutions. Training in technical skills, on the one hand, and promoting collegiality by involving in organizational decision making, on the other, are important investments in empowering colleagues.

Mentoring Leadership: The leaders in the conventional institutions see leadership as a static phenomenon and a steady relationship between the leader and a follower. This approach itself sets limitations to organizational development to the limits of qualities of its leader. The transformational leadership makes a serious bid to move further. It not only engages in technical capacity building of the followers but also on trusting and developing their managerial capabilities. The managerial skills bring them the confidence that

is required to lead sub-systems in the institution, e.g. departments, office, gymnasium and sports division.

The second related challenge for the leader in the institution-building context, hence, is mentoring and creating leaders among the followers. The mentoring of leadership, on the one hand, prevents organizational decay in case of change of guard and also provides, on the other, sustainability to continuous organizational self-renewal. Relating to the earlier paradigm, mentoring leadership will imply capacity building and delegating not only tasks, but also the access to visioning for the department as well as for the school.

The ascribed leadership, within the organization, is an important element that can either build or destroy organizations. Argyris (1993) called them power agents. He maintained that "These informal leaders exert power and influence over their peer groups, through competence and knowledge, personality, interpersonal skills, rewards and favours, or cohesion". Apparently, this could become a challenge to the principal himself or herself. The first step is to identify these ascribed leaders within the informal groups. Alternative and/or collective leadership may render a leader vulnerable (Frazier, 1997) and irrelevant. But becoming vulnerable to the strength of others is the real test of leadership. It is, at this stage, that the leader transforms himself or herself into thinking and visioning leader rather than being bound by the task-relationship dynamics. In this context, saying by Lao Tzu, a famous Chinese philosopher in the 6th century B.C., on leadership, is worth recollecting:

*A leader is good when his presence is felt
A leader is better when his absence is felt.
A leader is best when neither his presence nor absence matters.*

Conclusion

Often we come across a question, "Is leadership behaviour inherited or can it be changed and developed?" There is no straight and easy answer. Leadership is part of the personality, hence it is shaped with environmental exposures in the early years of life, and some qualities inherited by birth. However, behaviour modification is a tested technique in management. Leadership behaviour can also be modified to make it more effective through sustained wilful efforts. However, it cannot be induced externally; it can come only through self-concern. In other words, leadership qualities can be inculcated only if a leader makes deliberate sustained efforts. In a way, the implicit message is that the full potential of leadership is hardly known. Planned and deliberate effort to inculcate leadership qualities can optimize the potential.

Data, Information Systems and Decision Making

Introduction

As breathing is to living, decision making is to management. It is a part and parcel of management – both with regard to day-to-day items as well as on items with long term implications. It is the quality of decisions that either make or break the organizations. Decisions are taken on more than one basis — on impressions and perceptions, and on facts and information. Many a time, the manager depends upon the impressions he or she develops on the basis of one or two incidences. These impressions are developed by either listening to others or by observing a phenomenon or a person himself or herself. Some managers are little more careful; they verify the impressions with others. This helps them develop a better perception of the individual about whom decision is to be taken or about the situation or the case on which the decision is to be taken. However, there are very few occasions where data and facts are collected before taking decisions. In this chapter, the main emphasis will be on decision making based on facts. This is necessary since total quality management aims at continuous quality improvement; it needs to base its development strategy on a base-line information. Hence, data and information are necessary foundation for decision making for continuous quality improvement. But before we move further on the issue, let us have an overview of various ways of taking decisions in organizations.

Decision on Files

Decisions are taken on files, in meetings, on one-to-one interaction/discussion. In the formalized bureaucratic system of management, there is an elaborate process of decision making on files. Decisions taken in meetings as well as in one to one discussion are placed on file. In fact, till it is on file there is no

sanctity of the decision. The files move from one end of the hierarchy to the other end through specific steps. A typical sequence of decision making in a bureaucratic system is --

- Head in the hierarchy notes on files, "please put up" and marks it to, say, the Administrative Officer (AO).
- AO records, "comments please" or simply signs, and passes it on to the Section Officer (SO).
- SO, in turn, puts his or her initial and marks it to Assistant or UDC.
- After the Assistant or the UDC makes his or her propositions, he or she marks it to the SO.
- Usually the SO forwards the file to AO with comments like "agreed"; some are over-enthusiastic and paraphrase the same proposal, once again.
- AO repeats what the SO has done and forwards to the boss who is under rules, the "competent authority".
- Usual noting of the boss is "as proposed".

This passing the bulk style of decision making can be diagrammatically represented in Figure 9.1.

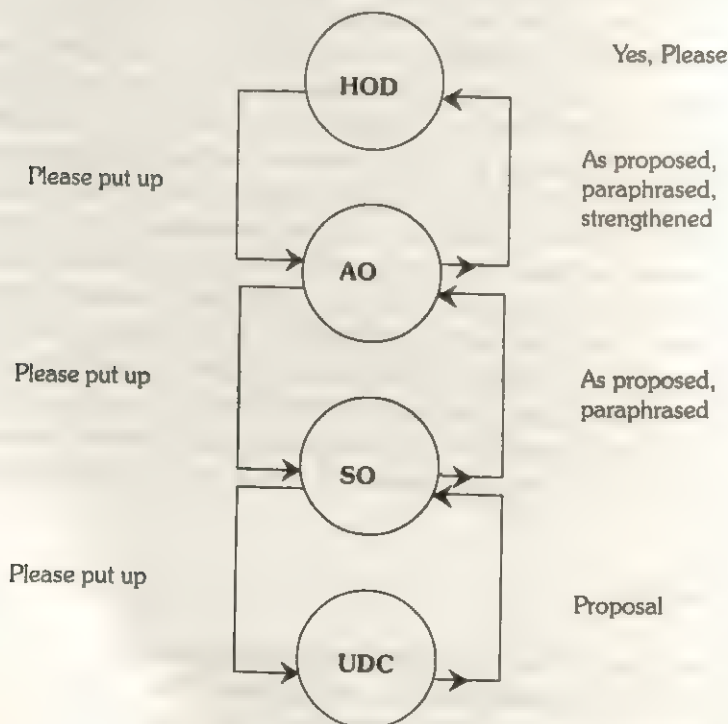


Figure 9.1. Passing the bulk decision making

Some clever boss in the bureaucracy, who wants the decision in a particular fashion but is keen to hide his or her involvement, briefs the subordinate orally how and what to propose. This bottom up approach to decision making is safe for the bosses, but suffers from poor quality since the quality of the decision actually depends upon the quality of the person at the lower end (Devi, 1996) who proposes, and not on the rest in the hierarchy. In educational institution, this creates a serious problem. For example, when training material was being produced in a management training institution for a programme on TQM in Education, it was decided to process all papers in computers and take laser printout on a common format. Down the line clerk decided that since a few of the papers that were photocopied from printed material, were readable, though not easily, these should be photocopied without processing. There was no concern for quality of the product although this will send wrong signals to the participants about quality consciousness and concern. The main problem with this variety of decision making is the lack of vision and understanding of a perspective at the point of origin of a decision.

The second, but rare approach is when the idea is mooted at the top end with larger vision and is passed on to the channel for 'comments' or 'please examine'. The file comes back with the comments; usually the comments are provided justifying the proposal on the basis of rules and regulations. There are wide variations in the quality of decision depending upon the source of its origin (Devi, 1996). Whatever be the origin of the proposition or the mechanism of processing, bureaucratic management does not recognize a decision unless it is on file.

There are several occasions when we take decisions in formal and even informal meetings and discussions. The relatively conventional format is when a meeting is held under a designated chairperson; the member secretary or convener of the meeting initiates and moves the agenda items, participating members give their views and a decision is arrived at. Decisions are noted and the proceedings are recorded. The member secretary drafts the minutes of the meeting, gets the approval of the chair and then circulates the minutes to other members. If no comments are received, it is construed as approved by all members. Then the resolution gets the status of an organizational decision.

The third mode is the informal discussion. A note beginning with "Discussed with you" usually follows this. The decision has actually been arrived at the informal chat. The note formalizes the decision.

What is important is that in organizational decisions, there are formalities irrespective of whether the actual decision was arrived at on file, in a formally convened meeting or in an informal chat. The decision is invariably formalized on file.

Decision Situations

There is more than one type of decision situation in an institution – i) routine or conventional, ii) unconventional, and rare and creative. Careful analysis of the files will reveal that majority of the files warrant routine decisions, e.g. staff leave, salary disbursement, purchase, admission, examination, etc. Many principals who are competent and have developed a knack for management, take very little time to dispose of such files.

There are situations where unconventional decisions are taken on conventional matters. This needs, on the one hand, the dynamism on the part of the decision-maker, and on the other hand, a kind of systemic thinking and perspective. Let me cite a case to illustrate the issue .

One member of the staff of a Regional Institute put up a leave application to visit Chennai. Principal called the staff member and asked him whether he can take the responsibility of some outstanding work of the Institute in Chennai at the Directorate of Education. The staff member happily agreed to accommodate the assignment within his personal leave.

The principal asked him to send a tour plan for approval. The staff member confirmed that he will accommodate the official work within his personal visit. Principal insisted that he should put up an official tour plan along with his personal leave application for two-three days.

The argument of the principal was that for the outstanding works in the Directorate, either he has to visit himself or depute some other staff member. The Institute has to incur expenditure on travel, any way. Now that one of the senior staff members was going to Chennai and is willing to undertake the responsibility, why should the Institute not spend on his travel and also sanction the number of casual leaves so that the staff member may attend to his personal work in Chennai.

The routine decision would have been to sanction personal leave to the applicant and depute another person to Chennai for the outstanding work in the Directorate. The dynamism in the decision-making is in combining the two, thereby saving the absence of one more staff from the Institute, simultaneously sending signal that the institute cares for and values its staff. The decision is likely to motivate the staff of the institution.

Though there are very few dynamic decision-makers but the cases of such

decisions are plenty with them because they often see many more alternatives to the same situations than what the conventional persons see.

Rational Decision Making

In the above case, the head of the institute had several choices. He knew his options and exercised the choice judiciously. Indeed, the scientific decision making is identifying the alternatives and making the right choice. This is the basis of rational decision making. The approach to rational decision-making has been competently dealt by Kepner (1965) in '*The Rational Manager: A Systematic approach to Problem Solving and Decision Making*'. For our purpose, we will bring only tips of the thesis. There are basically two parameters in rational decision-making. One parameter is search for the alternatives and the second parameter constitutes, the conditions that the decision must satisfy. In fact, this particular dimension of conditionality brings in rationality and the issue of decision-making on facts.

Any major decision-making situation offers several alternatives. The decision-making is basically choosing one of the many possibilities. The best choice or the best decision depends upon whether it fulfils all or the maximum number of conditions. The conditions can also be divided into two categories, necessary and desirable conditions. A decision must fulfil all the necessary conditions. The best decision is the one that fulfils, besides all the necessary conditions, maximum number of desirable conditions. Just to illustrate, let us take a hypothetical case of buying a house.

The buyer has spelt out his or her requirements with clear specification. She has also spelt out what must be there, and what extra facilities she would prefer; call them as necessary and desirable conditions. A property dealer offers her information on three houses. The buyer plots the information and data on a sheet of paper (Table 9.1 on page 132).

Both House Nos. I and III fulfil all the necessary conditions. House No. II does not; hence out of consideration. House No. I fulfils two of the four desirable criteria, House No. III fulfils three desirable criteria. Hence, the buyer decides to go for House No. III.

It should be noticed that in order to arrive at this decision, the buyer needed good amount of data and information to examine whether the alternatives fulfil the conditions or not. Management in TQM context emphasizes this very approach of making decision on facts rather than on perceptions and impressions.

Table 9.1. Rational decision making: hypothetical case of buying a house

Conditions Necessary	House I	House II	House III
DD – 15x20ft	15x20	18x20	17x22
3 BR – 12x12	12x12,12x12,12x12	14x12,14x12,12x12	12x12,12x12,12x12
1 BR + Toilet	Yes	Yes	Yes
1 more Toilet	Yes	2	Yes
Kitchen—8x10ft	8x10	10x12	10x8
Cost: maxm. 15L	14 0L	15.750L	14.5L
Destrable			
Balcony	Yes	Yes	Yes
Servant's Qr	No	Yes	No
Garage	No	Yes	Yes
Lower Cost	Less 1 0 L	More 0.75L	Less 0.5L

Decision on Facts in School

There are many such incidences in the life of an organization, e.g. location of girls' hostel in a co-educational institution, construction of a new library and learning resource centre, centre for information technology, etc. These are periodic decisions, there are other areas that are directly related to quality requiring frequent and/or periodic decisions. Let us examine a few issues in the school where the quality and data are importantly interlinked and it is only the data that can indicate the quality now; and also whether the quality is improving or deteriorating over a period of time. Such areas can be chosen on the basis of what is considered as the indicators of quality by the members of an institution. Let us assume that academic skills of learners, performance in class, school and external examination, performance in sports and games activities, punctuality, discipline, morality are some of the accepted indicators of quality¹. Each issue needs data and information before a rational decision is arrived at.

¹ The indicators of quality can be a large variety of items. To maintain manageability, each school shall have to prioritise and develop the acceptable list of indicators – acceptable to the principal, staff, parents and even students. While these should be treated as your 'operational definition' of indicators of quality, each indicator will have to be actually defined operationally.

1. **Learning Skills:** Reading, Listening and Writing are the three major learning skills. These also facilitate development of the skill of learning to learn. A school that sets out its mission to improve instruction and academic performance, has very little choice, but to build basic learning skills. The first important requirement is to ascertain the current status of learning skills. This would imply measuring reading speed and comprehension, listening comprehension, writing speed and legibility, etc. Similarly, other attributes like achievement motivation, attitudes, values, sociability, reasoning abilities, etc. can be measured and data stored. Measurement of such and other characteristics of a batch of students, as they move from one standard to another, will indicate whether their skills are improving; also who has improved to what extent. Such measures carried out annually or biannually provide strong indicators of direction of the movement.
2. **Transition Rate:** Transition rate, as a concept, means the number of students moving from one standard to the next. Obviously, the better the institution, the larger is the proportion of such transition. In order to ascertain the academic quality, it is necessary to calculate the transition rate from one year to another. Let us see this in the following matrix.

Table 9.2. School transition rate tabulation sheet

Year → Grades ↓	1995-96	1996-97	1997-98	1998-99	1999-2000
1 st	60	60	60	60	60
2 nd		58 + 2	57 + 3	55 + 5	59 + 1
3 rd			(54 + 2) + 4	(50 + 2) + 8	(48 + 3) + 9
4 th				(52 + 2 + 2) + 4	(47 + 2 + 4) + 4
5 th					(50 + 2 + 2 + 1) + 3

The school admits 60 students – 30 in each section, in each of the primary grades. It provides new admission in 2nd to 5th grades only on the basis of vacancies. The data in each cell indicates number of fresh admission in all the grades from 1995-96 through 1999-2000. Examining diagonally downwards,

the table indicates transition rate. For example, from the batch of 60 students admitted in the base year, 1995-96, 58 were promoted to grade II, 54 to grade III, 52 to grade IV and 50 to grade V in 1999-00. Thus 50 out of 60 or about 83% is the transition rate. The table also provides data on transition of the new students indicated by + within bracket. Compared to that, only 47 out of 60 students admitted in 1996-97 reached grade IV – a transition rate of 78% which is likely to go down further by grade V.

Such a matrix provides a number of indications--

- There can be inter-grade variation in the transition rate in the same year;
- The transitions rates can vary between two years for the same grades; and
- Within the same grade, the transition rate can vary from one section to another.

The perceptive principal would see this as indication of what transpires in the classrooms, examination hall, etc.

3. *Number of Classes in a Year:* As mentioned earlier, every school has a stipulation of the number of the working days and number of classes to be taken according to the time table. Data can be collected on number of classes taken per subject, per class and per teacher. This can be used to check whether the institution is fulfilling the process specification — one of the components of quality management. There would be variation in the number of classes taken among the grades and even within the same grades among the subjects. The difference will also be between the actual classes taken and the classes supposed to be taken. Such data and information will help in taking decisions.
4. *Daily Attendance:* Attendance in classes is another important feature for improvement of quality. It would be interesting to figure out the average attendance per class. A school may believe that it knows average attendance per class; the reality can, however, be different. One of my own four-year-long research, with more than 6,000 primary grade children, indicated that there is a seasonal variation in attendance in the rural areas (Mukhopadhyay, 1998). While the average attendance was about 79% across the year, the average attendance was relatively low during monsoon and harvesting seasons and more during autumn, spring and summer seasons. The average attendance, besides the seasonal variation, also indicates the teacher quality, management efficiency and attendance of students.
5. *Attendance at Prayer Meetings:* Attendance in the prayer meetings is the indicator of punctuality. The prayer meetings are conducted before the school starts. This is also called Morning Assembly. The attendance at the

prayer meetings, say by head count in each of the Houses, provides the number of students who are punctual to the school. This can also be used to study the punctuality of the teachers and even the principal. The head count over a period of time would indicate the management efficiency of the House Masters.

6. *Classroom Teaching Competence*: The classrooms are usually very secretive. Only students experience what and how a teacher teaches. One of the important critical success factors in quality management is essentially improving the classroom teaching competence of the teachers and the classroom processes. The principals and inspectors of schools observe classrooms without any structured observation schedule that can generate reliable data. In absence of such observation schedule what is available is some impressions and perceptions obviously coloured with biases and personal prejudices of the observers. On the contrary, classroom proceedings can be observed on a classroom teaching competence scale. There are several such observation instruments.

The Classroom Teaching Competence Scale developed by Mukhopadhyay and Others is one such. This scale offers a maximum and minimum of 72 and 0 scores respectively. If the teachers are observed on such a scale, it will generate data on each teacher; observed over several occasions, it will provide a trend data on teaching competence of a teacher over a period. Further analysis of the components of the test will provide important indications of the relative strengths and weaknesses vis-à-vis component skills of teaching for every teacher. This in turn can be used as a sound basis for decision on staff development.

Let us say that a school decides to observe each teacher four times a year on this scale. The data can be entered in a table of the following format.

Table 9.3. Hypothetical scores of teachers

Observation \Rightarrow Teacher \Downarrow	O_1	O_2	O_3	O_4	Average
1	46	48	51	53	49.5
2	64	61	58	57	60.0
3	44	34	47	42	41.25
4	55	53	56	55	54.75
5	35	37	40	38	37.5

The data on the Table indicates comparative performance of teachers as well as consistency and/or improvement of a particular teacher over the months of a year. Teacher II gets the highest average score of 60 whereas the lowest average of 37.5 is scored by teacher V. Further, teacher II is consistent in his/her scores in various lessons. Compared to that the scores vary from 34 in one lesson to 47 in another in case of Teacher III. Teacher I demonstrates steady improvement from one lesson to another. Detailed component-wise analysis will indicate a teacher's relative strengths and weaknesses in various skills of classroom teaching. Similar data can be collected on use of other instructional methodologies.

7. **Results Analysis:** Results are often given to the students subject-wise. At best, they are compared with the best score, in the class. Although such a mark sheet can be good enough for a student, it is not enough for the teachers and particularly the principal. There can be two or three different types of analysis. Firstly, for each subject and each grade and for each section, the mean, mode and the standard deviation can be calculated. The raw scores will automatically indicate the range – from the lowest to the highest score. While the mode indicates the score that majority of the students cluster around, standard deviation provides a very important

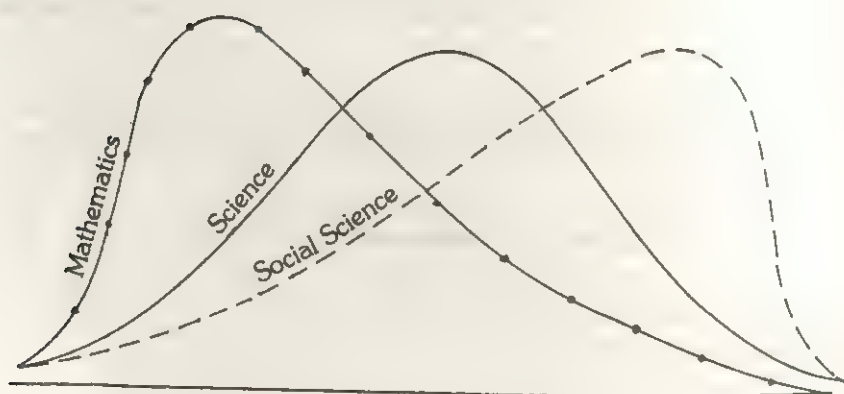


Figure 9.2. Normal and skewed curves on science, social sciences and mathematics

Information on the dispersal of scores.

These graphs indicate that the scores in science are normally distributed. The scores in social sciences are negatively skewed – more students have performed better. And, in mathematics, scores are positively skewed indicating that more students have fared badly in the subject.

Just as these are the curves on three subjects of the same class, such curves of the same subject across various grades can be plotted. That will indicate inter-class differences in performances in a subject facilitating decision-making -- where to plug the holes.

In the Board Examination, performance of students can be analyzed in terms of percentiles so that you can get a comparative picture – where do the students stand vis-à-vis all the candidates in the Board.

8. *Sports and Games*: Sports and games, and other co-curricular activities are important dimensions of the school quality; indeed, more important than these are recognized to be, because these activities influence the character building of the students. Usually, the activities are organized and concluded with distribution of awards. Hardly, any data are maintained on the performance in different items of sports and games, etc. Only data can indicate whether there is a steady improvement on the performance. An institution can maintain records of participation of each child in such activities along with preferences and performances therein. Similarly, on each item the performance and data can be maintained. For example, in the track event, say 100 meters, what is the range of 'timing' and what is the best 'time'. It is only such data that can offer opportunities for taking decisions on modes of further improvement through effective training.

9. *Indiscipline*: A school can maintain records of cases of indiscipline in prayer meetings, classes, examination hall, sports and games ground and other areas of school activities. Similar facts can be obtained on instances of unfair means in examinations and tests, the cases of copying of journals in science practical, projects, etc. Such data will enable taking rational decisions and also help in assessing the change in the incidences and nature of indiscipline.

These are only a few examples. Data can also be generated on infrastructure and instructional resources like instructional material, audio and visual aids, learning resource centres, library and their usage, etc.

Steps in Creating Data

The primary reason for collecting and collating data is to develop a basis for taking decision on the basis of the facts. For example, an institution might be quite satisfied with the way examinations are held — it is smooth and trouble free. But inside the examination hall, there can be copying either unnoticed or ignored. This obviously does not indicate quality. The quality conscious manager will like to ensure that if there are 20 cases of unfair means this year, it should come down to 10 next year and may be zero the year after.

The decision-making on facts, hence, requires sound mechanism of generating valid and reliable data. There are a few major steps involved in generating valid and reliable data for decision making.

Choice of Tools

Firstly, there has to be certain *instruments* for collecting data. The instruments can be tests, inventories, questionnaires, interview schedule, observations schedule, etc. The instruments can be developed in-house; readily available instruments can be adopted and/or adapted to suit the needs of the institution. Classroom Teaching Competence Scale, mentioned earlier, is one such instrument, which has been tested for reliability and validity. There are tests, scales and inventories for measuring study habits, reading and listening comprehension, reasoning abilities, attitudes, values, etc. The important consideration in decision-making on facts is to identify the areas where the institutions need data and facts for decision making.

Data Collection

The second step is collection of data. Data can be collected from several sources. For example, the data on results, number of classes taken, average attendance can be collected from the available records in the institutions. For other areas like reading and writing speed and comprehension of students or classroom teaching competence of teachers, attitude of teachers towards students, etc., it will be necessary to administer the tests and the questionnaires. There are a number of occasions when principal discusses with teachers and counsels them, and or teachers discuss with the students about their problems. Usually, such discussions are unstructured and not recorded. Should these be conducted on structured schedule — on a series of pre-identified questions and be recorded, it will generate a trend data and hence can be used for decision-making. Alternatively, the principal and the teachers maintain a detailed note on their

discussion with the teacher and the students respectively, in a diary. This will help in reviewing the progress in the next event of discussion.

An important issue in data collection is to create valid and reliable data. The validity of the data will depend upon the kind of questions asked — should the question be asked directly on the issue on which data are required, it should provide valid data. The question of reliability and dependability is whether the same question will get the same response if repeated. Depending upon the situation, the respondents may have to be taken into confidence before data are collected. This is particularly important where the data on individual performance is concerned.

Finally, the issue is about the respondents. Data for TQM should be collected from all stake-holders in the institution, namely, members of the managing committee, principal, teachers, non-teaching staff, students, parents and old students. Wherever possible and relevant, it is good to collect data from more than one source; for example, on reputation of the school, parents, old students as well as management can offer data. Such comparison, often called triangulation in research jargon, will offer more dependable basis for decision making.

Data Storage

The third stage is data storage. Since TQM essentially emphasizes on long-term perspective and looks for continuous improvement, it is only on comparative basis that one can see whether the quality is improving. Hence, data will be needed for comparison over the years. It has to be stored and preserved. The data can be stored manually on files or on the computers. It is obviously useful to store data on computer for easy retrievability; computer can also be used to carry out the necessary analysis. In fact, the computerized management of data has given rise to the concept and practice of Management Information System (MIS). Considerable amount of professional literature has been developed on the subject (Bhola 1995, O'Brien 1999). This has also been termed as Decision Support System – the MIS with the facts in its store supports decision making, indeed decision making on facts.

Data Analysis

The fourth stage is data analysis. Data have to be analyzed to find the necessary trends. Data analysis may require wide range of application of statistics – from very simple descriptive statistics, like central tendencies, dispersal, percentage, frequency distribution to extremely complicated predictive methods like multivariate analysis – regression, analysis of variance, analysis of covariance, factor analysis, etc. The predictive kind of analyses are necessary for

generalization in research. For purposes of decision making on facts, simple descriptive methods that can provide not only the current position but also the trend, should be adequate. For example, usually percentage is used to describe the performance of students. If the percentages are compared between the years, it provides a clue whether the school, in terms of students' performance, is moving forward or deteriorating or maintaining the status-quo. By computing simple critical ratio, one can also test whether the difference in percentages are significant or not.

However, in certain situations, one may actually need certain types of analyses. For example, there is a hunch in an institution that performance in social sciences is related to students' language capability. This can only be found out by computing the coefficient of correlation between the scores in language and social sciences. This correlation can be further used to examine whether there is a causal relationship between language abilities and performance in social sciences. Should the answer be positive, one has to take a decision on enhancing quality of language instruction. Here comes the question of judicious choice of which kind of analysis to be carried out.

Data Presentation

The fifth stage is data presentation. The data can be presented in more than one form. Most common forms of data presentation are tables and graphs. One of the most common forms are tables with two axes each depicting one set of variable. For example, in Table 9.4, the Y-axis has one common variable namely the year, and the X axis carries the mean scores in subjects like English, Hindi, Science, Mathematics and Social Sciences. The cells accommodate data. Tables can have raw scores or percentages and other forms of processed scores (Table 9.4).

Table 9.4. Mean scores of xth standard board examination

Years	English	Hindi	Science	Mathematics	Social Sciences
1997	44	48	52	55	42
1998	48	44	57	51	38
1999	39	47	44	46	47
2000	42	53	49	48	49

Tables can also have qualitative information in the form of either statements or qualitative codings (Table 9.5).

Table 9.5. Sample table containing statements on teachers

Attributes Teachers ⇒ ⇓	Punctuality	Interest in Students	Preparation for Teaching	Interest in School Activities	Inter-personal Relationship
Suman	Always: makes special effort to be punctual	Takes keen interest	Makes full preparation for every class	Does not take interest beyond academic activities	Not very good: rather isolate among teachers
Vijaya	Generally on time	First to jump into with help if there is a problem	Takes it easy, rather casual	Always: ahead of every one to volunteer; also competent	Very good: popular among teachers and students
Manoj	Very irregular	Not much	Rarely prepares for teaching	Reluctant, except in co-curricular activities where he takes great interest	Good: goes well with teachers
Sridhar	Always: Effortlessly punctual	Selective: takes interest in student's personal problems – guides and counsels well	Does not make any special preparation for classes	Selective: takes interest in administrative matters and library only	Average: does not have either great friends or arch enemies in the staff
Mani	Occasionally late: feels ashamed	Keen in student activities, but lacks skill in handling students	Well prepared – makes fresh preparation every time	Reluctant: not interested beyond his routine duties	Rather isolate: remains in one corner of the staff room engaged in some reading

Such tables provide a quick comparative picture of the staff on any other area. Data can also be meaningfully presented through graphs. The graphics are

visuals and make more effective communication. There are a number of alternatives to present data on graphic mode like histogram, bar charts, columns, pie-diagram, scattergram, lines and curves, etc. The presentations can also have 3-D effects. Let us examine some sample presentations.

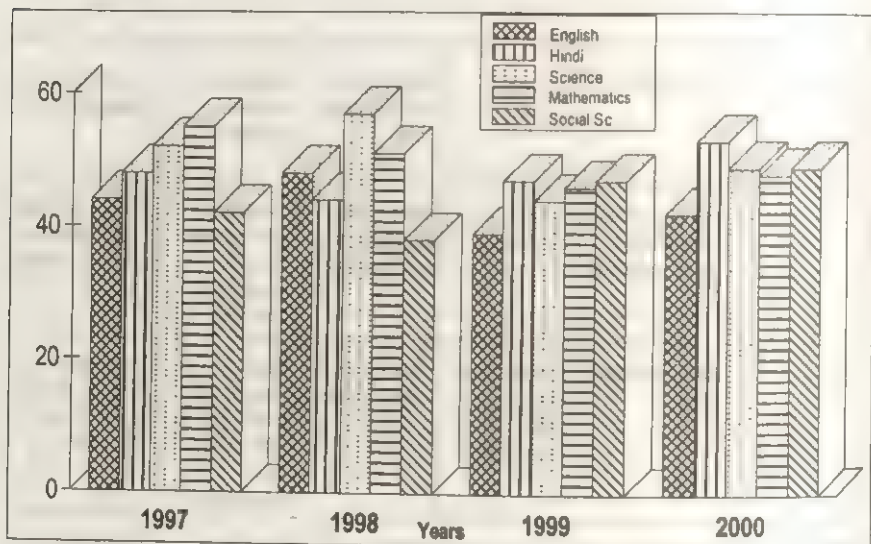


Figure 9.3 Bar charts of mean scores in board examination

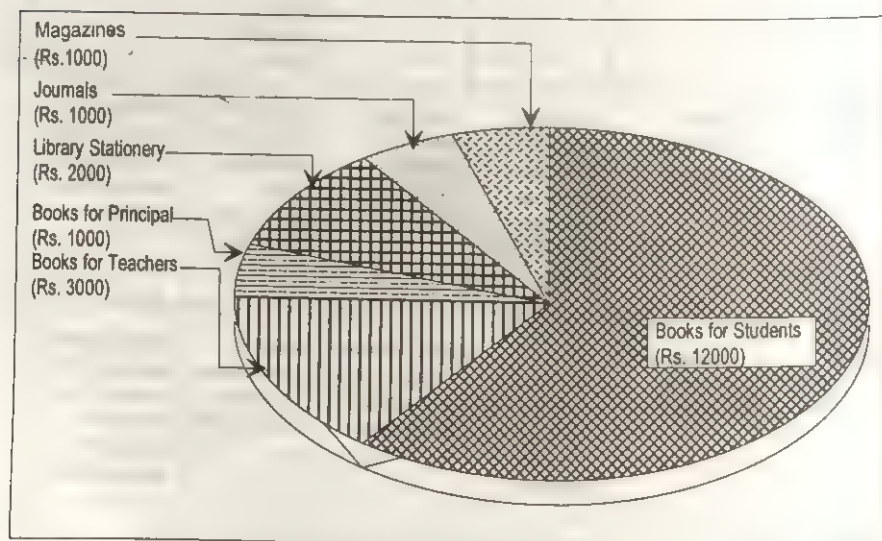


Figure 9.4. Pie diagram of expenditures

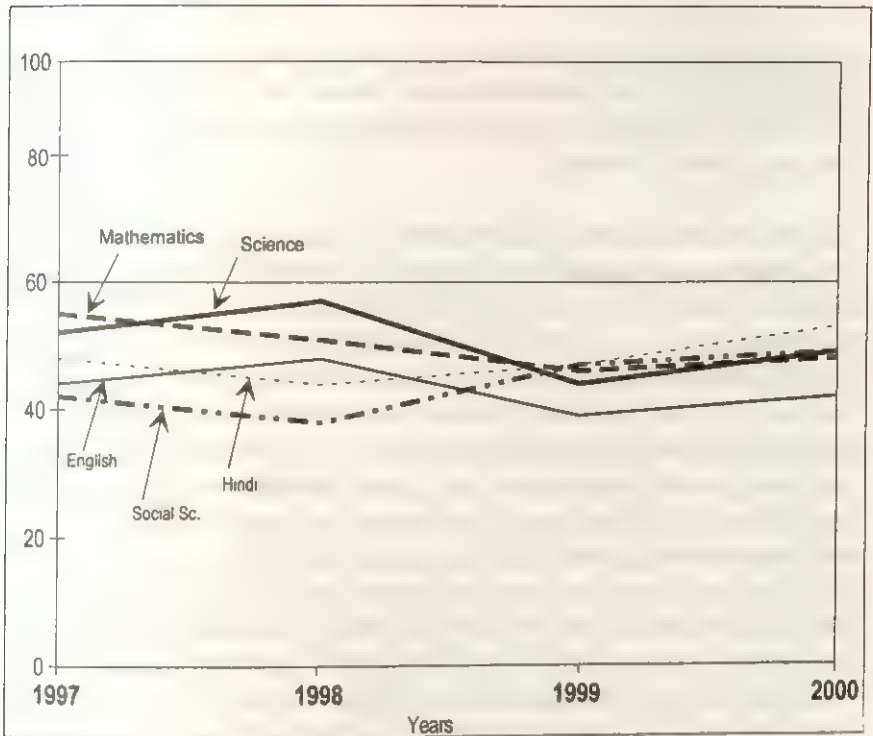


Figure 9.5 Line charts

There are many more interesting ways of presenting data (Kaufman and Zahn 1993, Wainer 1981). Such graphic presentations can be made, by using appropriate computer software. For example, electronic spreadsheets like Excel or Lotus 123 effectively convert data into graphics. There are other specialist softwares as well like Harvard Graphics.

Data Culture and Skills

Various such analysis can provide a sound basis for both collective as well as individual decisions. Also, the facts are the only basis to indicate whether or not there is any progress in the institutional quality. The conventional decision-maker will normally brush aside any scientific or innovative method of decision-making whether the concept of Rational Manager or decision-making on facts. But then the TQM is an innovative approach and not cut out for the conventional heads of institutions. It can only be appreciated and experimented by those who are open to new ideas and practices, who are dynamic and have the competence to manage quality. It does require lot of competence in designing

instruments, actual data collection and storage, data analysis and data presentation. These are largely the skills of a researcher. This implies that TQM and decision making on facts demands that each school has to build in a research component in its functioning.

The skills needed for creation, management and processing of data have to be brought within the range of the school staff. It is not necessary that the principal himself or herself has to learn all the technicalities of instrument designing to statistical analyses. He or she needs a good smattering of the approach. A dynamic principal would ensure development of the necessary research skills in a few of the staff members or recruit one who has such a background. For example, a teacher with an M.Ed. degree or post-graduate degree in sociology, psychology usually brings with him or her basic knowledge and skills in research methodology. While a majority of the teachers can master the basics of statistics and data processing, a teacher of mathematics or statistics or econometrics is likely to pick up faster due to his or her background in quantitative techniques. The TQM schools can develop a team comprising individuals who are good in instrument development and or adaptation, in data generation, in computerization and data analysis, report preparation etc.

Conclusion

Decision making is part of the life of a principal. He or she takes and has to take innumerable decisions every day of the week. The crux of the question in the TQM context is the quality of decision, and involvement of others in the decision. To translate rational decision making as well as decision making on facts requires a different orientation – a shift from emotional (spur of the moment) to rational decision making. It will also be necessary to develop a 'data culture' in the organization and develop a set of skills that are normally available with trained researchers. Importantly, data culture facilitates participative decision making, for it offers everything for everyone to see. It is transparent, fact based, hence more scientific.

Human Resource Development for TQM

Introduction

Humans are the most significant resources available in an institution. In financial terms, human resources cost almost 90 per cent of the total annual budget of school education. Both, organizational growth and decay are functions of human resources – their development and management. Hence, the contribution of the staff in organizational functions and development can hardly be over-emphasized.

Total Quality Management is a dynamic concept that insists on continuous development. From the standpoint of TQM, even the best of the staff is not enough; for, that can be static (best at one time) whereas TQM is dynamic. The staff need to be developed, skilled and re-skilled on a continuous basis. This is necessary not only because knowledge is expanding at a tremendous pace, but also because learning media and styles are continuously changing warranting new skills and competencies. Further, TQM professes participative management through team work. Indirectly, it indicates the need for development of every staff in the institution without which the teams will be weak, and participative management will produce results below average. Hence, in the context of TQM, human resource development assumes special significance. Two of Deming's cardinal principles, namely 'Institute training on the job', and 'Institute a vigorous program of education and self-improvement' put direct emphasis on the human resource development for TQM. Along with the content and transactional or pedagogical skills, the staff in TQM organization needs managerial skills and competence. To cope with this triangle of content - pedagogical - managerial needs, the staff needs to be developed at frequent intervals.

Understanding Others

The first stage of human resource development is understanding others – their intellectual, emotional, social and moral qualities. It is equally important to understand the relative strengths and weaknesses of each staff. There are several ways through which ‘understanding others’ can be accomplished. Individual staff can be described in terms of their personality attributes (Cattell’s 16 PF or Eyesenck’s Introversion-Extraversion, etc.), ego states and life positions (Transactional Analysis School of Eric Berne), *Satwa*, *Rajas* and *Tamas* Gunas¹ enunciated in the Vedanta.

I have dealt with the methods of understanding self through Transactional Analysis as well as *Triguna-Tatwa*¹ in another piece in detail (Mukhopadhyay 2000). In the present context, it may be useful to understand the staff with apparent institution-related attributes of confidence, commitment and competence. These three qualities can be represented in the following manner:



Figure 10.1. Commitment-confidence-competence triangle

Although commitment-confidence-competence has been arranged in a sequence, it is not very easy to decide whether confidence leads to commitment or commitment leads to confidence. That competence is based on both commitment and confidence is evident to the extent that competence can be developed if commitment is there. The main communication in the triangle is

¹ The quality of *Satwa* is indicated by knowledge, wisdom and enlightenment. According to certain scholars, interpreted from the western materialistic philosophy, *Satwa* implies harmony

The quality of *Rajas* is indicated by high activity level, energy, greed, possessiveness, attachment to material possession, anxiety and tension, etc.

Tamas is represented by inertia and resistance, lethargy, sleep, incoherent mind, irresponsibility, lack of conscience, etc.

that commitment is the basis for development of the other attributes. Let us make an effort to elaborate each of these three attributes.

The identification of competency and performance areas have also been done through job analysis of teachers by several investigators like Lalithamma (1977), Panjwani (1982), and others. Dave (1998 - in NCTE's Competency Based Commitment Oriented Teacher Education For Quality School Education (--) Initiation Document) provides the most comprehensive framework for understanding a relatively similar triangle of Commitment-Performance-Competence.

Box. 10.1. Five commitment areas

- 1 *Learners* — love for the learners, readiness to help learners, concern for their all-round development, etc.
- 2 *Society* — awareness and concern about the impact of teachers' work on the degree of advancement of families, community and the nation.
- 3 *Profession* — internal acceptance of the role and responsibility of the teachers' profession, no matter under what circumstances one entered in it.
- 4 *Excellence* — care and concern for doing everything in the classroom, in the school and in the community in the best possible manner 'whatever you do, do it well'. The do-it-well attitude.
- 5 *Basic Human Values* — Genuine practice of professional values such as impartiality, objectivity, intellectual honesty, national loyalty, etc, with consistency. The role model aspect.

Box. 10.2. Five performance areas

1. *Performance in Classroom* — including teaching and learning processes, evaluation techniques and classroom management.
2. *School-level Performance* — including organization of morning assembly, celebration of national, social and cultural events, and participation in school-level management.
3. *Performance in Out-of-School Activities* —including such educational activities as field visits of learners, observation tours, etc.
4. *Performance related to Parental Contact* — including such matters as enrolment and retention, regularity in attendance, discussing progress reports, improving quality of achievement, etc.
5. *Performance related to Community Contact and Cooperation* — including such issues as VEC work, joint celebration of certain events by the community, eliciting community support in the development of the school, etc.

Box. 10.3. Ten competency areas

1. *Contextual Competencies* — To provide a wider view of the development of education in society and teachers' role in it.
2. *Conceptual Competencies* — The concepts of education and learning, psychological, sociological and neuro-physiological aspects of education, etc.
3. *Curricular and Content Competencies* — According to specific stage of education such as primary, upper primary and secondary
4. *Transactional Competencies* — General, subject-wise, stage-wise.
5. *Competencies in Other Educational Activities* — Such as planning and organizing morning assembly, etc.
6. *Competencies related to Teaching-Learning Material* — Classical TLM, New Educational Technology, Local Resources, etc. also preparation, selection and use.
7. *Evaluation Competencies.*
8. *Management Competencies.*
9. *Competencies related to Parental Contact and Cooperation.*
10. *Competencies related to Community Contact and Cooperation.*

Dave's commitment, competence and performance given above are interrelated. Indeed performance is the function of competence and commitment. Based on Dave's theoretical construct and previous studies on job analysis, we can derive eight major areas of work and hence, performance of teachers. These are:

Planning: Planning of annual curricular programmes, units and lessons, setting up of laboratories and conducting the laboratory activities, co-curricular activities, examination and evaluation, etc

Guiding: Whether officially designated as counsellor or not, each teacher helps students both inside and outside the class in academic, personal and even in cases of financial problems.

Teaching: Classroom teaching, tutorials, groups activities, home assignments, laboratory practical, field trips and a host of such other things.

Examination: Setting of papers, planning the examination schedule, invigilation duties, evaluating answer scripts, tabulating marks, and declaring the results, several times in a year.

Management: Management of curricular activities, time management, co-curricular activities, classroom management, laboratory, library, field trips and educational tours, house activities, conduct of terminal, annual and board examinations.

Human Relations : Relationship with the principal, colleagues, students and parents, supervisors, old students, other professionals (e.g. teacher educator), etc.

Professional Development: Reading, writing, lecturing, attending training programmes, seminars, conferences, extension lectures, etc.

Extension and Social Service: Lectures, writing and publications, participating in social action programmes, community development, etc.

These competencies can be classified into three categories and represented in a three dimensional model.

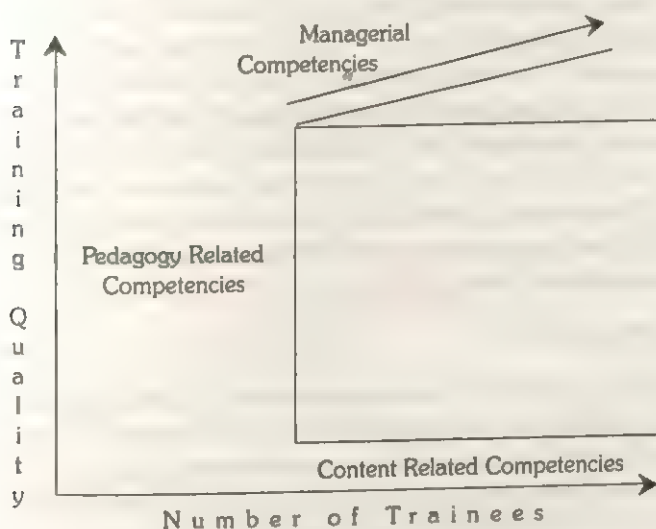


Figure 10.2. 3-D model of training areas

Content Competencies

Although the emphasis on teacher education has primarily been on training in pedagogy, however, all communication and pedagogy can be built only on the sound knowledge of the contents of the teacher. In our view, knowledge of

content, though not 'sufficient' is the 'necessary condition' for good teaching. The upgradation of content knowledge has become all the more necessary since knowledge is expanding at exponential rate. Recent studies on teachers also indicate gross content deficiency of teachers. Hence, refresher courses on contents have been introduced as in-service education for all levels of teachers — primary, secondary and higher education teachers. Thus, one of the major areas of human resource development is content upgradation.

Education or Pedagogy Related Competencies

The educational or pedagogy related competencies comprise preparation and use of teaching learning materials, classroom transaction, interactive instruction, projects, student evaluation, etc. Let us take just one case for illustration. Educational television has been introduced at the school level since early 60's and that in higher education since early 80's through Country Wide Classroom Programme. Though there are a good number of studies that indicate the potentiality of the television media on the one hand and, gross under-utilization on the other hand (Mukhopadhyay and Sinha, 1993), there is no input whatsoever in the preparation of teachers on actual methods of use of media in classroom transactions. Similarly, use of interactive techniques and information technology are some of the missing elements in teacher training; hence they also do not figure in the transactional maps of institutions. Given the new scenario where the learning habits and skills are changing, the pedagogy related competencies assume new and greater significance. Besides the transactional methodologies, the pedagogical skills should also include general preparation of teachers for broadening their horizon and appreciating their role in the larger social, national and international contexts.

Managerial Competencies

The managerial competencies comprise organization of the activities in schools, relating school activities with community celebrations, parental contact and interaction, etc. In the TQM context, where participative management through team building is the hallmark of management, each teacher needs a new set of managerial skills of visioning and sharing vision, collective decision making, working together, etc. In the context of multi-channel learning environment, the challenge is in management of instruction and learning (Mukhopadhyay and Parhar, 2000). Thus, there is need for building managerial competencies among the teachers.

Understanding others will necessarily include understanding the strengths and weaknesses of each individual teacher vis-à-vis the 3-D model of Content-

Pedagogy-Management. This should also help in identifying the training and development needs of each individual in the institution.

Can-do-Will-do Attributes

The competency parameter alone is not enough. This must be juxtaposed with commitment or willingness to perform. The commitment and willingness makes the fourth dimension. The competence and willingness parameters for each of the three dimensions, namely, content, pedagogy and management can be plotted in a matrix. People vary in the degree of their competence as well as willingness vis-à-vis a particular task. Both competence and willingness are distributed over a continuum; hence each one of these attributes can be assessed on a 5-point or even 9-point scale. Should we take these two aspects on a matrix, the 5-point or 9-point divisions will yield as many as 5x5 or 25 and 9x9 or 81 cells in the matrix depicting as many combination of attributes of the staff. Though apparently more scientific, such large categories are difficult to handle. To make it easy and feasible to handle, these two dimensions can be dichotomized offering four possible combinations as given in the matrix below:

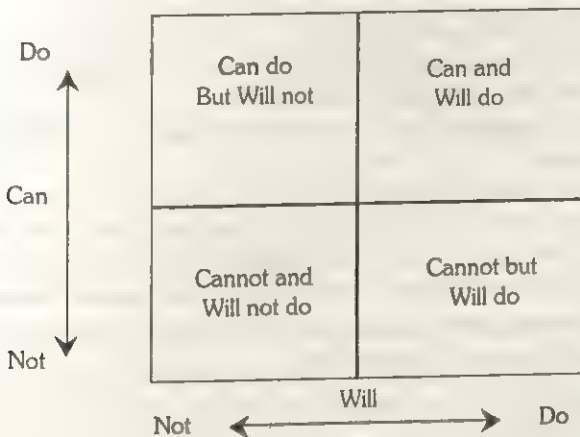


Figure 10.3. 'Can-do-Will-do' matrix

This matrix provides four categories of teachers; those who --

- Can and will do – the safe and trusted lieutenants of the system
- Cannot but will do – motivated but lack competence
- Can but will not – competent but unwilling, and
- Cannot and will not – neither motivated nor competent.

From the angle of human resource development for TQM --

- The first group will search ways on their own and fend for themselves; they are auto-learners, they will make use of any opportunity to upgrade themselves. They actually do not need much external help. Best help is to remove the roadblocks on their chosen path of development – (principal) just walk ahead of them, detect landmines and remove them.
- The second group, since motivated, can be developed faster; the deficiencies for each individual teacher need to be identified; tailor made programmes can be designed for each one of them. With one parameter (will do) being common with the first group and other (can do) developed, they can and will join the first group and strengthen the institution.
- The third group is the most risky. Since they are competent, but without necessary motivation, they are a potential negative force in the system. Motivating being far more difficult than building competencies, dealing with this group is a perplexing problem. Let us admit that there are no formula solutions to this problem. Should we draw upon some of our successful experiences with such group, it will indicate that *Involvement-Responsibility-Recognition Cycle (IRRC)* works with such people. Hallmarks of management strategy are --
 - *Involve them in decision making;*
 - *Make strategic interventions so that they accept the responsibility of their decisions and implement them; and*
 - *Recognize their contribution, in private and in public, initially even if it is not significant.*

IRRC has been found to work with good number of staff. This should fetch dividends by way of moving at least a few from the third group to the first one. 'Gung Ho'ing (Blanchard and Sheldons, 1998) is a tested technique of inculcating willingness or motivation in work through developing sense of worthwhileness and independence reinforced by cheering up.

- The fourth group is a definite liability. They lack both motivation and competence. It is difficult to motivate; and since they are not motivated, it is difficult to build competence. In leadership theory, this group will be treated as immature category. Direct instruction should work, at least partially. Assign them simple tasks and use 'authority' to ensure timely accomplishment. Insist on completion, and, if need be, concede quality to begin with. As they learn to complete on time introduce element of quality. As a matter of strategy, emphasize initially on development of competencies – take simple and one skill at a time and then move on to integration and complicated skills. Micro-teaching for improving classroom instruction is

one such measure. As the skills and competencies develop, you can use the IRRC with them.

This is a spiralling process; involvement in decision making itself is recognition. Recognition should enthuse them to participate in decision making process and implement them. The key question in TQM approach is that every one must be quality conscious and strive towards that. Hence, the challenge is to enlarge the 'will and can do' group and reduce other groups. Certain management scientists have also described this approach as 'marshy land' approach.

Should you refer to the chapter on decision making on facts, this is one other area of decision making on facts. The principal can maintain a private diary and rate each of his/her colleagues on competence, commitment and even on confidence on say, a five point scale. Give them the development input and rate them every quarter, half-yearly and annually, based on data and facts, e.g. classroom observation, observation on co-curricular activities, etc.

In the foregone pages, we have deliberated largely on the training and development issues vis-à-vis teachers. Same or similar parameter can be used for non-teaching staff. For TQM, they are equally important. I remember, an interesting observation by a Principal who participated in a 3-week management training programme for college principals in National Institute of Educational Planning and Administration (NIEPA). During the Programme Evaluation, he commented, "NIEPA faculty is punctual and competent. That was expected. What impressed me most is your Class IV staff. If you asked them to get something done in five minutes, they were right there in two minutes with the work – amazing responsiveness". This indicates the need to build the support staff for management of quality.

It is necessary to carry out the job analysis, training need assessment and development strategies for the non-teaching staff as well. They are real support to the academic staff; but for them, the performance of even competent academic staff can be dramatically low.

HRD Strategies for TQM

There are three basic requirements for implementing TQM so far as staff is concerned. These are --

- Quality Consciousness;
- Striving for Individual Excellence; and
- Team Work.

Any HRD strategy must contribute to more than one of the above goals, if not all. In order to comprehensively cover all the three targets, it would be necessary to develop a strategy that will use more than one method. Let us examine the following four approaches to HRD:

- Induction;
- On the job training;
- Participating in training programs; and
- Participating in Open and Distance Education Programme.

Induction

Induction is an important investment on staff. However, more often than not, this skips the attention of the manager. We often get into a hurry to assign routine institutional tasks to the new incumbent. It is important to invest time on proper induction. BHEL used to give 18 months of induction training to the newly recruited bright young engineers. Successful candidates in Indian Administrative and allied services undergo long pre-induction programme. Teachers are trained; but just training of a teacher is not enough. A new recruit should understand and get accustomed to the culture of the institution. Let me mention an interesting case of induction.

Box 10.4. Case of an induction

After submitting the joining report, the young teacher in a technical teachers' training institution went to the principal asking for assignment of duties. The principal advised him to spend the next one month talking to the faculty, visiting the library, sitting in the classes, working in the laboratories, workshops, studio wherever he likes including gardens, etc. Of course, staff club. Only, expectation is that the new teacher should maintain a diary and time log book for the month. Also, he was free to meet the principal whenever he needed and principal was available. The teacher met the principal only twice during the month.

At the end of the month, the new teacher went to the principal. This time, the principal asked him what he was interested in. The new teacher, a civil engineer, expressed his desire to work on educational film making. The Principal called the head of media department and informed about the interest of the new staff member. He was advised to pick a theme from civil engineering and make films. The young man of those days is one of the leading film-makers in education today.

There are two messages from this unconventional, innovative approach to induction. Firstly, the new incumbent had ample opportunity to understand the institution – its culture and ethos, and had time to adapt himself to the institutional culture, norms and practices. He had enough time and opportunity to socialize and get him accepted as a colleague. Secondly, a person recruited today will be on the job for the next 30 years. If she or he does what she or he wants to do, she or he will contribute far more than if she or he is asked to do what she or he does not want to do. Further, if she or he has to contribute for 360 months, is it not worthwhile spending one month on inducting him/her to the institutional culture.

There are several methods of inducting a teacher in an institution. These are:

- The principal provides information about the school — its culture, practices, programmes, specialties etc.
- Pre-induction training — the candidate can be provided a pre-induction training by organizing a training programme; for example, Indira Gandhi National Open University (IGNOU) has a regular provision for pre-induction training for its newly recruited academic staff.
- The newly recruited teacher can develop a schedule and with permission, observe other teachers teaching. This will not only give him/her an idea about the teaching practices but also the composition of classrooms, ethos of the students as well. Similarly, he or she can observe other activities like library class, practicals, co-curricular activities, etc.
- A young teacher can be attached to a senior teacher to assist him or her in arranging or creating instructional aids and materials, share and participate in the classroom proceedings in the team teaching format, assist him or her in setting question papers and assessing answer sheets, etc.

On the Job Training

Before a HRD programme is developed, it is important to diagnose the strengths, weaknesses as well as potentialities of a staff member. Against each of the eight areas of performance mentioned above, a profile can be drawn up for each teacher indicating the relative strengths and weaknesses. The profile of eight areas of competencies (Can-do) may not be the same as the profile of the commitment (Will-do). For a teacher, in some areas, the commitment and competency can match and be complementary whereas in some other areas there may be a gap (Figure.10.4).

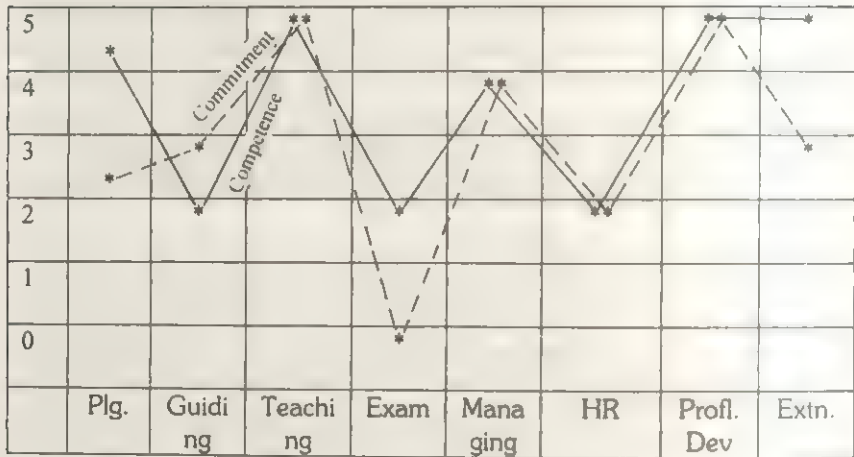


Figure 10.4. Can-do-Will-do profile of a teacher on eight areas of performance

This profile can be the basis for developing individualized development plans. Again, these plans should have data indicating state of the art of capabilities of a teacher vis-à-vis the eight identified areas. The initial data will provide the base-line on which the developments can be compared over the years.

HRD has to be on a continuing basis. On the job training is one important alternative. There are several ways of on the job training vis-à-vis the eight areas listed above. One of the ways is attachment to senior teachers who guide the new entrant in all areas of functioning. Other methods are staff workshops, planning and executing individualized development plan, job allocation followed by observation, support and corrective feedback, cooperative learning programmes and projects, etc. Let us examine a few in greater detail.

Counselling Interview

One of the widely used approaches is the counselling interview with the teachers. The principal, vice-principal or even senior teachers can discuss, at individual level, the approach and performance and give feedback on various areas. The primary and only objective of such counselling interview is to provide development support, and not find fault with the teacher. The principal may have to handle the situation carefully at least to begin with since there are

sensitivities involved in this. The principal may fix up one or two meetings with each teacher in a year depending upon the size of the school. But before such meetings are conducted, enough data about various aspects of the teacher's activities must be collected. The data will have to be verified with the teacher.

Group Activities

The counseling mentioned above should encourage a teacher to participate in discussions and receive feedback. Once the confidence is developed in such an approach, it is possible to start group activities. A group of teachers, who deal with, say teaching of science in four or five sections of class VIII, can work together to plan the curriculum, develop unit and topic plans. They can visit each other's class as and when they are free, plan examination and counselling of the slow learners across the sections. This process would obviously create opportunities for discussion among themselves about each other's strengths and weaknesses, and a self-correcting mechanism can be set in.

Counselling and group processes have to be supported with professional inputs in Content, Pedagogical and Managerial Skills; and also in Self-Awareness skills. The institution can organize lectures/seminars and workshops on various content areas to deal with new developments by inviting scholars from local colleges, universities, national laboratories, industries, etc. Similarly, the institution can organize short workshops on educational technology, preparation of software, etc.

A practice quite common among the private schools of Delhi is worth mentioning. As the school reopens after summer vacation, teachers join schools two days ahead of their students. These two days are used as staff workshop days. During these two days, staff members develop their annual instructional plans; discuss with others and thus develop a departmental plan. During these two days, school authorities often invite experts to conduct training sessions and workshops with teachers.

This, I found to be an interesting, inexpensive and feasible mechanism of staff development through on-the-job-training.

Journals for Staff Development

Training programmes are time bound; and can be done only periodically. Staff development must have mechanism of continuing re-education. Journals provide an important opportunity for continued development. On the one hand,

journals bring in new ideas and tested ones through research for staff to emulate and experiment; on the other hand journals provide follow up support to the training.

Hence, creating provisions for subject journals, educational and pedagogical journals in institutions provides support for in-house staff development. Besides the subject journals, wherever available, three types of journals should be subscribed – journals dealing with --

- Education in the broader context for widening the horizon, e.g. *Perspectives in Education*,
- Educational Technology for improving instructional practices, e.g. *Journal of Educational Technology: Medium and Technology for Human Resource Development*, and
- Educational Management with focus on institutional management, e.g. *Management of Education*

Indian journals of equivalent international standard are usually of low cost; also they are more relevant to Indian schools. Three to four journal are available for about Rs.1000 per year. For a school with 25 academic staff, annual investment per head is as low as Rs. 40 and for school with larger staff, it is still lower.

An unconventional but effective strategy is to place these journals in the staff room rather than in the library. It requires special effort to go to find and procure a journal in the library. Left in the staff room, a teacher turns the pages in his or her leisure period and reads an article that interests him or her.

Story for Staff Development

Evans (1996) developed an innovative technique of staff development through stories. Initially, she wrote a story of a student and the way he was dealt with by the teacher. The story was discussed among the staff. Subsequently, each member of the staff was asked to write a story maintaining anonymity. In these stories, values, beliefs and styles were revealed in a very subtle manner. The discussions helped in validating the methods of handling.

For self-awareness skills, skills in teaching, student assessment, one can organize three/four hour workshops on Saturdays or on any other weekday when classes are off due to one reason or the other.

Training Outside: Face to Face Training

Another approach in staff development is taking advantage of formal in-service programmes offered by various resource institutions at the state and national levels, like the IASE, Colleges of Education, SCERT, SIET, NCERT, as well as international institutions.

In order to derive benefit out of all such programmes, it would be necessary for the principal to collect information on all such events and disseminate to the teachers. On the basis of their interest and potentiality to benefit, the teachers should be deputed to these programmes. The interaction among the participants in a programme itself is a powerful source of learning. Besides skill development, such programmes also broaden the horizons of the teachers.

The beginning of exploiting such opportunities is collecting training calendars of the state and national institutions, identifying the programme that is likely to be relevant and contribute to the development of knowledge, skills and attitudes of the teachers, vice-principals and principals, and negotiating with them for a berth. It is important that the principal himself or herself attends training and development programmes at regular intervals. On completion of each training programme, there should be a de-briefing session where the teacher makes a presentation to the faculty followed by discussion. This will enrich both the trained teacher and other colleagues.

Wherever there is a chain of institutions, e.g. DAV Schools, Ramakrishna Mission Schools, Christian Missionary Schools, etc. programmes can be specially designed to suit their specific needs; because of the network, the programmes will be feasible and cost effective. In fact, DAV has set up an organization for human resource development in DAV institutions. The Sahodaya Complex of CBSE affiliated schools is another such example.

Conference and seminars are other important sources of human resource development. It is not necessary to write and present a paper. Conferences are places where large number of papers are transacted. Within a short span of three-four days, participants get exposed to 30/40 papers documenting contemporary research and thinking in a particular area. This is besides the opportunity of interacting with peers and experts from other institutions, and listening (communication skills) to experts and guests. Finally, depending upon the affordability, institutions should consider deputing staff – teachers as well as principals -- to international programmes. This provides an important exposure to the outside world bringing in change in the outlook.

Open and Distance Education

The open and distance education has thrown up an altogether qualitatively new opportunity for continuous staff development. Several institutions are offering a number of short modules. There are post-graduate programmes in content as well pedagogy related issues in education. There are also a number of short modular courses on management, though not on education, that have significant relevance to institutional management. Educational institutions should take full advantage of such programmes.

Several institutions, other than open and distance education institutions, that deal with staff development have resorted to use of distance education methodology. National Council of Educational Research and Training (NCERT), for example, conducted several programmes for primary teachers and teacher educators through interactive television, supported by print material (Maheswari and Raina, 1997). NIEPA, the apex institution in educational planning and administration, conducts training programmes on management including total quality management in education through interactive television, supported by printed material. Each programme has a capacity of 400 participants. Full advantage should be taken of such programmes, since these are less expensive but more effective.

There are several other semi-organized distance education modalities for staff development. These are:

- Education Channel like *Gyan Darshan* or education related television channels like *Discovery*, *Channel Zed*;
- Newsletters, journals, books and self-instructional material;
- Audio, video programmes and multi-media packages on CD-Rom; and
- Internet.

Teachers can be encouraged to use these media; they can be brought together in semi-formal platforms, like staff council meetings, colloquia, tea clubs, etc. sharing their experiences and learning from such sources.

HRD Blue-print

In the foregone pages we have elaborately presented the concept and approaches to human resource development for total quality management in educational institution. In order to fructify the ideas, it is necessary to develop a HRD Blue-print. The following are the steps involved in developing the blue-print.

1. Let each teacher and employee engage himself/herself in an exercise of job analysis, rather task analysis. Each individual can use a Work-Time

Log Sheet to document their day to day activities.

- Let every teacher and employee identify the skills and competencies required to perform in each of the work areas identified. Further, let each one identify their relative strengths and development needs vis-à-vis their work areas.
- Tabulate the training needs for all teachers and employees in a Master Sheet vis-à-vis each functional area (Table 10.1). This should provide enough data for clustering the teachers and training areas, e.g. a group of teachers may need one kind of training.
- Discuss with the staff the Master Sheet, and collectively decide the strategy of development – what skills will be developed through on-the-job-training, where and in which programme can one be deputed for formal training, and what can be done through organized and unorganized distance education programmes (the last column of Table 10.1)

Table 10.1. HRD blue-print for TQM

Functions ⇒ Staff Member ⇓	Planning	Guiding	Teaching	Examination	Management	Human relations	Professional Development	Extension and Social Service	Mode and length of Training
A									
B									
C									
D									
E									
F									
G									
H									
*									
*									
N									

Note: Enter the training and development area, in terms of competencies, in each cell for every teacher.

While doing so, important considerations should be --

- Time scheduling – annual calendar within a long term framework since all the training needs cannot be achieved within one calendar year.
- Cost of development – development schedule has to be managed within the limited resources of the institution;
- Affordability to spare a teacher – it is necessary to negotiate between the developmental needs of a staff and the institution being able to afford to spare him/her from the school;
- Sustainability – one time development effort will have to be followed for sustainability and further improvement of the competencies, developed;
- Review – carry out review of staff development at multiple points – first immediately after the development activity/training, followed by review every quarter, and an annual review, and
- Annual Feature – just as TQM is continuous search for quality, HRD in TQM is also continuous; hence make HRD planning, execution, monitoring and evaluation an annual feature.

Conclusion

The theme of HRD for TQM is developing quality consciousness among one and all in the institution. Entire effort should be directed towards building awareness for quality as a culture. This will necessitate personal mastery over all the functions listed earlier. A meticulous attachment to the concept of the 'best' in all endeavours is necessary pre-requisite of TQM.

Importantly, the long term goal of HRD for TQM cannot be restricted to development of technical and managerial skills and competencies. The goal in the beginning is to convert each one into an empowered doer, empowered where they take charge of the situation. From empowered doers, the teachers and staff must move on to become continual thinkers. It is only this continual thinking that can make institutions learning organizations; and organizations that learn continuously can only look for continual improvement, the nucleus of TQM.

Strategic Planning for TQM

Introduction

Total Quality Management has also been termed as Continuous Quality Improvement (CQI) (Frazier, 1997). CQI is not merely a terminology; there are significant implications of the concept. Besides 'quality', emphasis is on 'the continuity'. Indeed, quality is a never ending journey (Navaratnam, 1997). But how? Conventionally, quality is managed as and when the issue emerges prominently (in the form of crisis management) or on the basis of a well thought out plan. TQM is essentially a philosophy of planned development. This would imply that just 'here and now' approach is not adequate. The institution needs a future vision – a foresight, where it intends to go in the next five or ten years.

The vision and the foresight have to be converted into goals and activities; and methods of accomplishing them have to be spelt out. Hence planning becomes a necessary ingredient in adopting TQM in educational institutions. Almost every author has used the word 'strategic planning' rather than 'planning'. Why strategic planning? What does it mean?

Strategic Planning

The word 'strategy' has a connotation of methods adopted primarily in war. In fact, to mean strategy, the word used in Hindi is '*ran-niti*' (ran — war and niti — approach or principle). But what might be the reason for importing the word, 'strategy' and the related concept from the lingua-franca of war in the field of management of industry, service or education?

In war, strategy is focused on a single point target – win and win, no plan to fail. The second and associated agenda is to win at the least cost – human life, equipments and money. Thirdly, war must be won at the shortest time. Fourthly, war plans to strike at the most vulnerable point of the opponent with the

greatest strength. Fifthly, timing of strike is extremely important in war strategy. Sixthly, skillful deployment of army, navy and airforce is crucial so that they may compliment each other and create synergy in the war front. There can be many other components of war strategy. But how are they relevant to education? Are they relevant to management of quality? Should we extrapolate these war strategies to education; TQM in particular, we will land up to things like:

- Strategic launching of TQM as an attack on poor quality;
- Protecting an innovative effort like TQM from failing;
- Achieving total quality at the least cost;
- Improving quality, and be on the way ahead, at shortest time – reduce incubation period and take off time;
- Finding safe entry point – using Kaizen principle, identify such an area where success can be ensured, and future effort and success can be built upon that;
- Timing and sequencing events in TQM to get the best benefits; and
- Ensuring deployment of the best human resources, and team work to ensure continuous improvement.

Should we accept this argument, strategic planning would imply developing a long-term plan with built-in medium and short-term plans to achieve organizational missions and goals at the shortest time, and at the least cost by deploying available resources and optimizing human capabilities. In this chapter, we will review some of the existing models of strategic planning followed by a model proposed for Indian institutions.

Strategic Plan Models

Almost every major author of TQM in education has dealt with this issue of strategic planning. And, that indicates its importance. Murgatroyd and Morgan (1993) proposed an interesting framework within which planning parameters can be fitted in. They built four generic models based on two parameters – access and service by dichotomizing both ‘access’ and ‘service’ into open and niche access, and basic and enhanced services respectively. Open access institutions are such institutions where any one can walk in and take admission if he or she fulfills the necessary qualification. There is no restriction on merit, caste, creed, religion, gender, language, economic class, etc. Niche access institutions are those where entry of students are controlled on pre-defined criteria. Whereas average government and government aided schools are open access institutions, fee charging private schools, girls schools and denominational schools are niche access institutions.

The schools that offer usual courses along with usual co-curricular activities can be classified as broad or basic service institutions; the schools that specialize, say in sports and games, or creative arts, or science education can be categorized as enhanced service institution since they also provide basic services. Authors have presented the four generic models in the form of following visual:

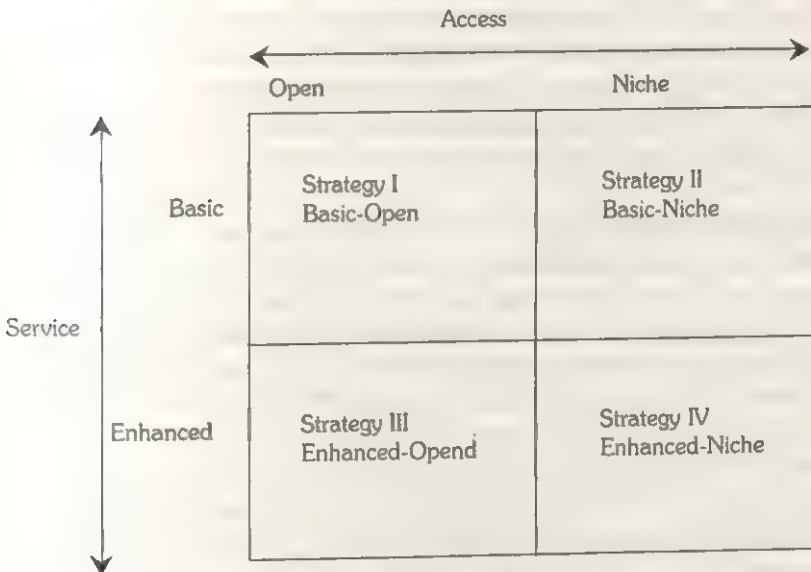


Figure 11.1. Four generic strategies of schooling

Source: Murgatroyd and Morgan, 1993

Basic Open: As mentioned earlier, this is the most common Indian institution at school level. Barring the fee charging private schools or such institutions where admission is based on merit as measured through selection tests, interviews, etc. and the denominational schools or single sex institutions, all others belong to the *Basic Open Category*. At the secondary education level, almost 1,05,000 schools belong to open-basic category. Any strategic plan model developed for this category of institutions will, hence, be applicable to large majority of Indian institutions. Although admission remains open, the strategic planning for TQM in such institutions will emphasize on quality improvement of basic services. Basic services can be curricular in a larger sense of the term as well as co-curricular for the students on the one hand, and satisfaction, incentives, rewards and recognition, etc. for the teachers and other staff, on the other. Based on the institutional assessment, preferably organizational diagnosis and SWOT analysis, a school may choose one or more areas for development. For example, an average performing school decides to ensure that all students enrolled in school will pass the Xth final examination. The strategic plan will demand focus

on the identified issue and developing strategies to achieve the same.

Enhanced Open: This model is similar to the first one where admission is open to all. But the institution may decide to focus on one area or the other. This could be academic excellence, excellence in sports and games or in cultural activities, leadership in NSS or Scouts and Guides or Junior Red Cross. Within academic areas, a school may decide to excel in science. For example, Madhyamgram High School of West Bengal is an average institution with open entry. It has lifted the Subroto Cup in National Inter-school Soccer Championship several times. This has been possible because of its major emphasis on soccer. Thus, soccer or games is the enhanced service in the school.

Thaker's High School in Ahmedabad, an otherwise average institution, bagged several state, national and international awards in science education and science activities in the school (Mukhopadhyay, 1981). The performance of the schools in all other areas was average as any other school. The enhanced service area in this school is science education. In all these institutions, there are special emphases on the activities in which they excel. That they continue to excel years after years indicates that this is not by accident; it is through planned effort that they reach the top and be there. Each one of them, in their respective areas, has worked for years before they achieved excellence. This indicates that the institutions had strategically planned their activities, resources and targets for achievement.

Basic Niche: As mentioned earlier, niche institutions are the ones where admission is restricted on one or the other criteria. At the school level, such schools are not too many. It, however, becomes a common pattern in higher and professional education. For example, Indian Institutes of Technology (IITs), Indian Institutes of Management (IIMs) and all prestigious technical and management institutions provide admission only on merit. District Institutes of Education and Training (DIETs) in many states also admit candidates on merit.

The institutions that provide selective admission but offer basic services fall under this category. About 5000 English medium private schools, Kendriya Vidyalays, Navodaya Vidyalayas, Ashram Schools, Sainik Schools and such other institutions belong to the Basic-Niche category. They may expand and diversify basic services. Take for example, The Mother's International School of Aurobindo Ashram, New Delhi. The school admits children on merit. It offers the usual curricular programme prescribed by the CBSE and offers wide range of co-curricular activities to students under the guidance of qualified and competent teachers. Within the basic services, it offers several diversifications.

For example, the school offers as many as 24 different trades in Socially Useful Productive Work (SUPW), or pre-vocational education. For development of leadership qualities and social sensitivity, the students work with the neighbouring community, they raise funds for social causes like care of the old, disabled, etc. Over the years, the school has built a strong tradition of quality in sports and games activities. In this case, there is an overall upgradation of quality in all its departments. The school is strategically well placed. Since the admission is on merit, there is a quality control in the student input. Because of the rules that govern the teacher recruitment and their service condition, the minimum qualification of teachers is fixed. The school management fully exploits its academic and social reputation to attract talented persons among the qualified ones as teachers. Having taken care of the academic excellence, it developed plans for developing leadership qualities and social sensitivity as part of basic service.

Enhanced Niche: Niche character is common with Strategy III. The difference is on the enhanced service. However, there are major variations in the character of 'niche' institutions. For example, a girls' or a boys' school is a niche institution since it is single sex institution. But between the two single sex institutions, say two girls' schools, one offering open admission (e.g. Udang Girls High School – one of the usual government or government aided institutions) and another on merit basis (e.g. Jesus and Mary's Convent – one of the English Medium Institutions) are qualitatively different from one another. The major difference is that the schools with selective admission on merit use more than one 'niche' criteria and have achieved minimum basic services, and are now ready for enhanced services, whereas the schools with open admission struggle to provide the minimum basic.

A school with selective admission can focus in one or the other areas of school activity. For example, Delhi Public School, RK Puram, New Delhi is a fee charging private institution like the Mother's International School. It provides all the basic services at a high quality. However, it decided to enrich its students in information technology. For last several years, the school has made significant efforts to enrich its IT resources – hardware, software and human resources. It has mobilized resources from parents and the community with the target of providing one computer to each child in a class. Similarly, a girls school is a niche school as it offers admission to girls only, otherwise, the admission is not selective. While it provides basic services at average level, it excels in sports. Over the years, it has developed a tradition of excellence in sports and games for girls.

These four generic models provide a sound basis for identifying and classifying an institution into one of the four categories. This provides the institution an

opportunity to examine the focus of TQM within the larger framework of service mix – whether to continue in basic service or resort to enhanced service; also to set up sequence of enhanced services over a time frame. The model also offers a choice for a school to shift from one category to another, and accordingly fit in the strategic plans.

Compared to four models by Murgatroyd and Morgan (1993), Kaufman (1992) offered a four stage model of strategic planning. These are:

- Scoping;
- Data Collection;
- Planning and Implementation; and
- Evaluation

The sequence of stages has been represented by a diagram in the next page (Figure 11.2)

Scoping: We have discussed earlier the levels at which TQM can target – mega (societal concern and linkage), macro (institutional) and micro (department/team/ individual). The first stage of strategic planning is to define the scope of TQM in the institution. Experiments with TQM in classroom transaction (Hansen and Jackson, 1996) or in staff selection (Cole, 1995) are instances of micro-scoping dealing with one component of the schooling. All efforts of holistic organizational development are cases of macro-scoping. Wherever, a school goes beyond its boundaries to include social action to transform a community, it demonstrates the case of mega-scoping.

Data Collection: We have discussed at length the importance of relevant and reliable data for decision making in the chapter on decision making. The second stage of strategic planning is collecting data and information on a variety of issues that intrinsically determine the adoption of TQM in institutions. The data and information are needed on --

- Ideal Vision;
- Beliefs and values;
- Current missions;
- Ideal and current results; and
- Needs.

In this context, please examine the Mukhopadhyay's Institutional Assessment System given in the Annexure. In section one, it calls for data on enrolment with gender disaggregation, teachers and non-teaching staff, budget and financial provisions, students' transition rate from one class to the next, details of the physical infrastructure and facilities, excellence in academic and non-academic

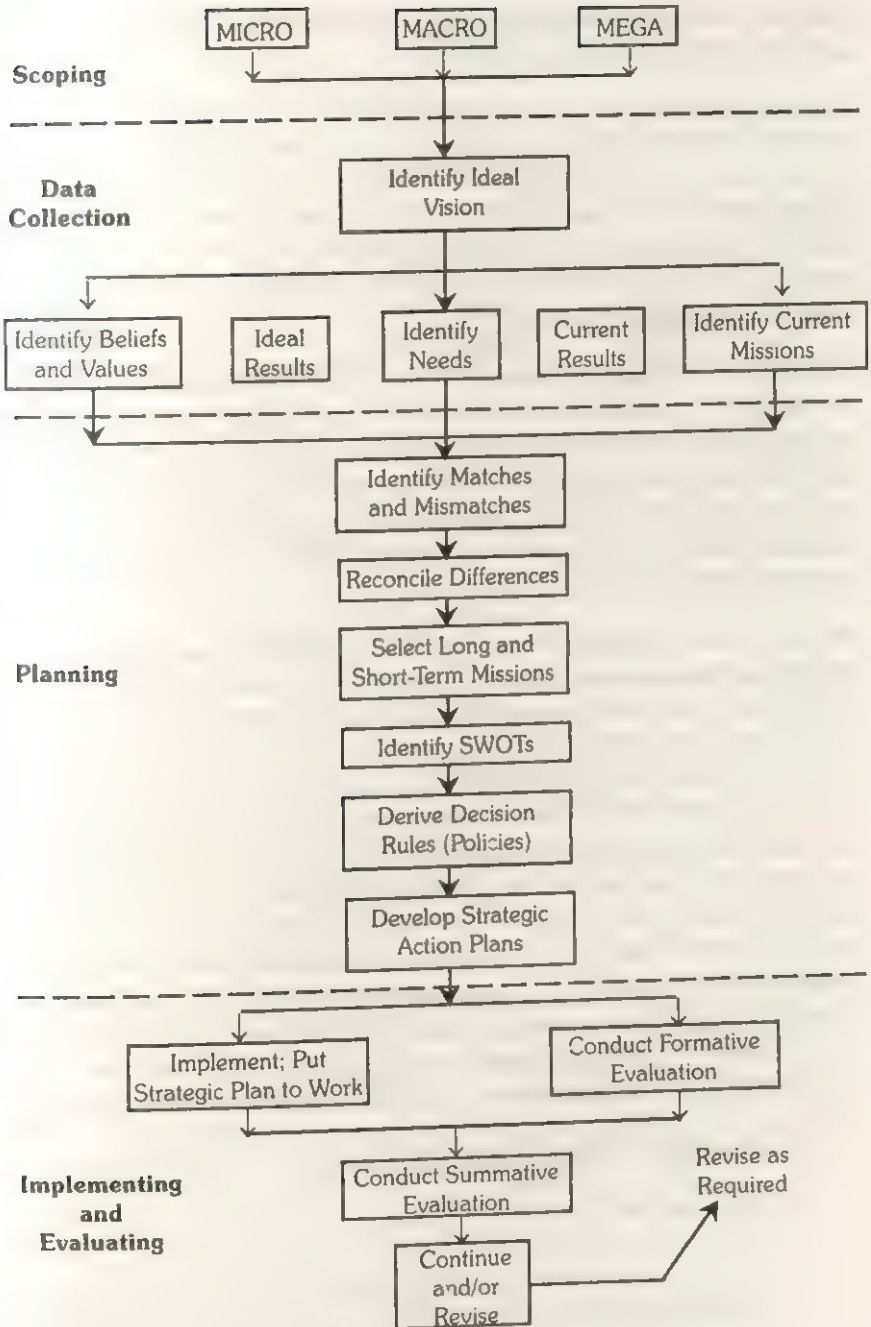


Figure 11.2. A four-level strategic planning process

Source: Kaufman 1992

areas, etc. You would probably notice that the data have been asked for five years. It is important to collect trend data.

In one of my recent TQM exercises with a major school, we collected data for five years. It revealed that the enrolment and performance of the school in both academic and non-academic areas have gone up phenomenally; but the number of classrooms and teachers have remained unchanged over the last five years. Only trend data can provide such revelations. Certain other sections, particularly the questionnaire for the parents, are designed to derive data on reputation (beliefs and values).

For the purpose of decision making on facts and as a pre-requisite to strategic planning, it is necessary to develop an inventory of items in various aspects of schooling where data are necessary. Next is defining the nature, source of data and the frequency of their updation. All such areas with defined inter-relationships can create the SMIS (School Management Information System), it can be planned well to develop the facility for RDBMS (Relational Database Management System).

Planning This is a composite area. There are a number of important activities. The first and foremost is identification of matches and mismatches. There are areas and activities that can compliment (matches) one another. There are other instances where activities or approaches can counter or contradict (mismatches) one another. It is important to identify them and make deliberate efforts to reconcile the differences. This reconciliation is the second stage of planning. The third stage is developing collectively, the short-term and long-term missions to guide the actions. The fourth stage is carrying out the SWOT analysis to identify the strengths, weaknesses, opportunities and threats. On the basis of SWOT analysis and the mission statements, both short-term and long-term, the strategic move is to decide institutional policies and rules for decision making. Focus is on rules and practices in decision making rather than on decisions per se, this is important in all participative management processes. The final stage is developing strategic action plans that will translate the missions.

Implementing and Evaluating This is the final stage comprising primarily --

- **Putting the plan to action;**
- **Carrying out formative evaluation;**
- **Carrying out summative evaluation, and**
- **Continue or revise as required.**

The four-stage mechanisms of strategic planning with all its sub-components provide a working model.

Sallis (1996) raised some guiding questions while proposing a six-stage strategic planning model. Such questions are linked to each stage. Let us review the questions and the stages of planning.

Table 11.1 Strategic planning process

Stages	Questions
1. Mission and Vision	What is our purpose? What are our vision, mission and values?
2. Customer or Learner Requirements	Who are our customers? What do our customers expect of us? What do we need to be good at to meet customer expectations? What do our learners require from our institution? What methods do we use to identify learner/customer needs?
3. Routes to success	What are our strengths, weaknesses, opportunities and threats? What factors are critical to our success? How are we going to achieve success?
4. Quality performance	What standards are we going to set? How are we going to deliver quality? What will quality cost us?
5. Investing in people	How should we make the best of our staff? Are we investing sufficiently in staff and staff development?
6. Evaluating process	Do we have processes in place to deal with things that go wrong? How will we know if we have been successful?

The questions formulated by Sallis are relevant and important. Response to these and similar questions can be the building blocks of a strategic plan.

Each of the three models proposed by Murqatroyd and Monjan, Kaufman and Sallis offer three different orientations to the concept of strategic planning for

implementing TQM in organizations:

- Murgatroyd and Morgan offer a basic framework by classifying institutions into four strategy-categories
- Kaufman offers a five stage action-framework, and
- Sallis offers six guiding principles in strategic planning.

It is interesting to note that the three models are not necessarily overlapping. On the contrary, these models can offer a three-dimensional model through synthesis (Figure 11.3.).

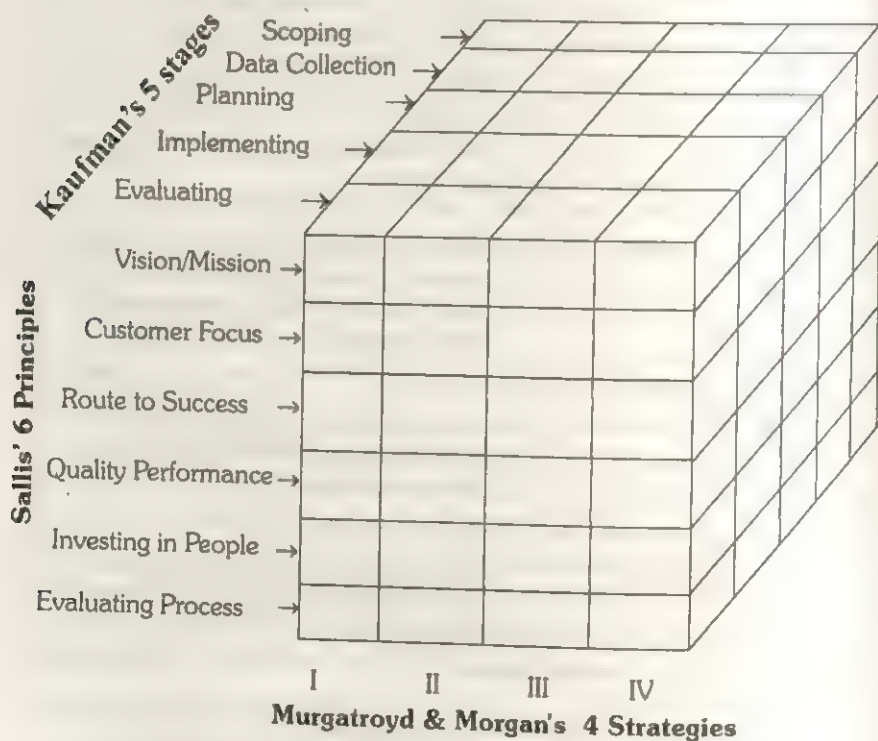


Figure 11.3. 3-D eclectic strategic planning model

By implication, each category of institution, Open-Basic, for example, needs to define its scope, methods of data collection, planning, implementing and evaluating as much as it has to define its mission and vision, customer focus, routes to success, quality performance, investing in people. Ideally, a strategic planning model should combine all the three models.

There are, however, certain commonalities among the three models. Kaufman's concept of scoping is the process of visioning at spatial level. Sallis takes the grammarian view of reductionism of vision into mission. This is referred by Kaufman in the next stage of data collection. Similarly, there are some common elements in the planning stage of Kaufman model and routes to success questions of Sallis' model as much as evaluating in both models is common. Investing in people, deciding standards and cost of quality are parts of strategic planning and implementing. Although both Kaufman and Sallis models are presented in generic forms (equally applicable to all institutions), there is a need to examine their comparative relevance to different types of institutions as mentioned by Murgatroyd and Morgan. In Indian context, for example, the planning capability is likely to be better in the Basic-Niche Institutions. The Enhanced Institutions may not necessarily be conscious of their type and specialties.

Proposed Model

Let us build, on the learning of these three models, a workable strategic plan for adoption of TQM in Indian schools. We will build the strategic plan in the following seven steps:

1. Belief, Vision, Mission, Goals;
2. Learner Need Assessment and Client Education;
3. Institutional Assessment and SWOT Analysis;
4. Quality Policy and Intervention Plan;
5. Cost of Quality;
6. Planning for Implementation; and
7. Evaluation and Feedback.

The inter-relationship among the various stages and components can be seen Figure 11.4. on page 174.

The model incorporates all the seven stages. It, however, indicates that vision needs the input of concept of quality and understanding of TQM as a strategy. Similarly, in deciding quality policy, inputs are necessary from leadership concepts and practices, human resources development and team work.

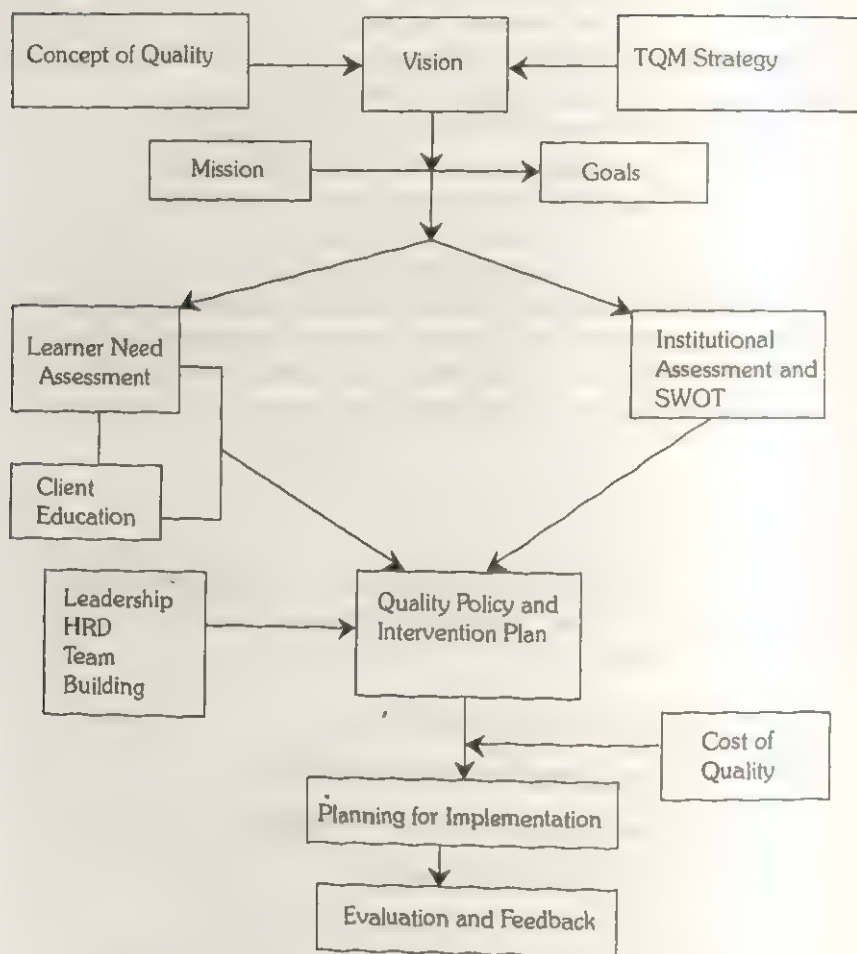


Figure 11.4. Strategic planning for TQM

Belief, Vision, Mission and Goals

Belief guides our action. Although there are no formal mechanisms in educational organizations for articulating belief, there are ample evidences in our utterances what we believe. Let us examine an episode.

After undergoing a training programme on resource utilization in schools, one of the participating principals visited me and said,

"The programme was really excellent. Every body taught so well. But, Sir, we have lot of problems in our school. All our students come from middle class

homes only. Hardly, 46% pass in the Board examination. Our teachers take tests every two months; they remain really so busy in testing all throughout the year. Still, the students perform so badly".

Do these statements indicate any belief? I guess so.

Belief No.1	Good programme for others, not for me.
Belief No.2	Students from middle class homes cannot perform
Belief No.3	Frequent tests improve results
Belief No.4	Remaining busy is the indication of teacher efficiency and commitment.

The principal did not intend to reveal her beliefs about her students, teachers and instructional processes in the school. But she did. But how valid are these beliefs?

- Do all students from the richer class perform well in examination?
- Do all students from middle class fare badly in examination?
- Does economic status have one-to-one relationship with brilliance and performance in examination?
- Is there enough evidence to prove that frequent tests without adjusting the instructional process improve results?
- Poor results can be due to gaps in cognition and poor articulation in examination – can frequent tests compensate for cognitive gaps?
- Does frequent tests eat on the time of instruction?
- Are there enough evidences to prove that remaining busy is indication of competence, even if it indicates commitment?
- What would be the difference in the impact between remaining meaningfully busy and mechanically busy on the students' performance?

Though the beliefs are questionable, they do colour the vision. The saying, 'you are what you believe you are' indicates enormous significance of beliefs in the life of an individual as well as of an organization. One strategic plan, hence, is to understand and share beliefs for two advantages. Firstly, one can separate out the actual belief from what one wishes to believe. Secondly, sharing the belief provides the foundation for developing collective belief founded on much more rational thinking. For example, if every one believes that 'this school will be the best in the state' (that is common among the schools like the Mother's International School or Modern School) every one is likely to work towards that.

Vision

Vision is built on a set of beliefs – beliefs about the organization, its people, environment, culture, structure, facilities, etc. Visions are of two types – the near vision and the distant vision. Distant vision is the dream or imagination. In Swami Vivekananda's view, imagination has a great role in life. The institute should continue to strive to reach that imagined status. Such a vision is not limited by time and quality. 'Best' is relative and there is a continuous shift in the 'best'; for, the 'good' ones are moving towards 'better' and the 'better' ones towards the 'best'. Even if being the best can be time bound, staying there is a timeless endeavour.

In a meeting of a group of TQM Institutions, elaborating on the vision, head of a teacher education institution was asked, "can you be the best in the country?" Immediate response was "no, how can we be?" To the subsequent questions by other members of the group, her assertive response was 'we have by far the best staff – both competent and motivated', 'we have the best of students selected through rigorous admission tests', 'the students come from good homes with reasonable financial affordability', 'college has good physical infrastructure, educational technology facilities, good linkage with other institutions', etc. When I asked, 'then, what was missing to be the best?' Almost a chorus response was "we can't believe that we can be the best".

Short-term vision has to be built within the visible range of time and quality. In a way, these are contributive to or are components of the distant vision. The distant vision can be divided both on components and time into short-term visions. For example, the vision of 'be the best and stay there' can be broken up into: (a) being the best on defined criteria – now; and (b) stay there – on and on.

Strategic point for TQM is to set a vision of the institution, and necessarily the vision should be a shared vision. Vision is a creative endeavour, not everybody is endowed with it. Hence, may develop a vision, if one is creative, and share or validate the vision with others. Alternatively, through brainstorming and vision building sessions one can develop collective vision for the institution. We will get back to the methods of visioning in the next chapter on implementation of TQM.

Mission

Mission is the end of the road target that any institution wants to achieve. Missions are futuristic and directional — statement of purpose of an institution.

However, most institutions do not have a documented articulation of mission statement. Sometimes mission statements are without meaning. Let us see what can be some of the mission statements:

- Most students will achieve mastery over all subjects.
- Students will demonstrate the values of cooperation, honesty, respect for elders, etc.
- Students will excel and achieve their full potential in physical, mental, emotional, intellectual and inner life development.

Goals

By the process of reductionism, goals are a mission unbundled and a mission is goals bundled. Goals are like mileposts; each goal contributes to the achievement of the mission. The goals determine activities, programmes and processes of an institution. Also, the goals determine the way, a programme is to be offered. Let us undertake a quick exercise of how the missions can be unbundled as institutional goals.

Mission Statement --

- *Most students will achieve mastery (learning) over all subjects.*

Goals (written in behavioural terms)

Teachers will --

- explain the concept of mastery learning;
- cite experiments and research on mastery learning;
- describe instructional design for mastery learning;
- plan experimental projects for mastery learning;
- implement mastery learning projects; and
- institutionalize mastery learning strategies.

Students will --

- cite examples of achieving mastery by students of similar background;
- exude confidence that they can achieve mastery learning;
- adopt new learning strategies;
- demonstrate achieving mastery learning – 80% of the students will secure 80% marks (popularly called 80/80 matrix in Mastery Learning lexicon) in all subjects.

All the goals, except the last one, are enabling goals; but these are important. The statement of goals indicates, that goals are basically the process of reducing the missions into components through reductionism or these are the products

of component analysis of missions. On the reverse path, missions are summation of goals – constructivism or synergizing. Hence, missions and goals are integrally related. This logical relationship between mission and goal holds equally good between mission and vision.

Learner Need Assessment and Client Education

There are two different strands – what the learners need and what do they want. There is a growing belief among large number of teachers that majority of students want a certificate and not knowledge or skills. This could have been adequate a few years ago when number of graduates was limited and jobs were related to qualifications. Now that every job and entry to every professional course is based on entrance tests, certificates have now turned out to be admit cards for the competitive tests rather than to jobs and or to the institutes of higher learning. It is only knowledge and skills that can hold graduates in good stead. Accordingly, the focus has now to be shifted to the learners' needs from wants.

Unlike the western world, where population growth rate is moving from zero to negative and schools are entering the competitive world for survival, in India and other developing countries with their unabated population growth rate, education is still a sellers' market with a paradox. There are more buyers of education than the system can offer, and there are too many graduates than employment market can absorb. Under the circumstances, schools need to develop a well designed mechanism for client education – educating them about the future employment and entrepreneurship market, gate passes to successful living (e.g. Learning not only 'to know' but also 'to do', 'to live together' and 'to be'—UNESCO 1996). This is not unusual; every consumer product industry keeps updating their potential customers. This will be evident from the advertisements and promotional literature of computer or automobile industries, particularly, ever since the market has been opened up and competition has become fierce.

Two important areas of client education are that: (i) there is no essential contradiction between learning and performance, performance with learning ensures greater chances of success in life than success without learning; and (ii) emerging employment market is skill and quality oriented and not qualification oriented.

The assessment of needs will depend upon the goals and targets – to offer basic services or enhanced services. On the basic services, there is a need to assess

learning difficulties. For example, it is estimated that nearly 2/3rd of the students fail in Mathematics and English in the Board examination. There can be diagnostic tests to identify where the difficulties are and accordingly remedial action can be worked out. Longitudinal assessment of learning difficulties, say, in mathematics will indicate that the failure in the board examination is the effect of cumulative learning difficulties over the various grades before the candidate was sent for the Board examination at Class X.

I recollect my association with an innovative experiment in a few Municipal Primary Schools located in slum areas of Mumbai. After taking graded tests, the schools labeled 4th grade children into 2nd, 3rd and 4th grade equivalent competencies in mathematics. Similar exercises were done for 3rd and 2nd graders too. The schools reconstructed instruction in mathematics by clubbing children on their competency level across the formal grades to which they belonged; within three years, the students achieved reasonable homogeneity on minimum levels of learning in mathematics.

Learners' needs assessment should be both in academic and non-academic areas. To get a meaningful assessment of learners' needs, it is necessary to involve the learners as well as their parents. Should the institution be producing 'employable graduates', e.g. teacher training institutions, vocational education institutions, etc. it is equally important to consult the employers.

Thus, the basic issue is to assess the needs of the 'clients' and in the process, it is necessary to consult multiple categories of customers, namely the students, parents, community, employers, etc.

Institutional Assessment and SWOT Analysis

Institutional assessment and SWOT analysis are inter-related and inter-dependent. Institutional assessment provides basis for SWOT analysis which largely is a technique of organizational diagnosis. Institutional assessment can be carried out in more than one way. We have provided a set of instruments for carrying out institutional assessment. MIPQ is a simple tool that helps generating an institutional profile indicating the stronger and weaker areas of an institution. It is a sound strategy to use some well designed instrument to collect information on variety of aspects of an institution. Also this provides the base-line information against which you can measure progress of your school.

SWOT is a very familiar and popular acronym in management in general and organizational diagnosis in particular. SWOT stands for

- S for Strengths
- W for Weaknesses
- O for Opportunities, and
- T for Threats.

The main thesis is that for quality improvement, the institution should --

- Identify and encash on its strengths and strengthen them further;
- Identify and initiate deliberate action to reduce weaknesses;
- Identify the opportunities, exploit them and convert them into strengths, and
- Identify the apparent and potential threats and try to eliminate or reduce their intensity so that they may not harm the institution and aggravate the weaknesses.

Whereas strengths and weaknesses are easily recognizable, it is not true for the opportunities and threats. Identification of these two requires special effort. Let us see a sample SWOT of a school in Table 11.3.

Table 11.3 SWOT analysis of a sampled school

Strengths <ul style="list-style-type: none"> • Good building facilities • Strong drama and sports activities • Strong social action activities • Enthusiastic management 	Weaknesses <ul style="list-style-type: none"> • Poor academic results • Poor staff quality • Inadequate sports and games facilities • No recognition for social action programmes
Opportunities <ul style="list-style-type: none"> • Multiple use of building • Excel in dramatics and sports • Enthusiastic and supportive local community and old students • Mobilizing funds for innovative activities 	Threats <ul style="list-style-type: none"> • Teachers' union activities and low staff morale • Talented students may leave for better sports facilities • Loss of image – from high profile socially sensitive to conventional school • Community may withdraw support

SWOT analysis is a participative process of organizational diagnosis. There are several ways in which this is actually carried out.

- The SWOT analysis can be carried out by asking participants to fill in blank SWOT sheets. The responses in S,W,O, and T can be collated and presented for discussion and consensus building.
- The S,W,O, and T can be identified through an open discussion with the staff. Many institutions have tried their hands on direct consultation without the help of any structured questionnaire. Deft handling can give good results in this approach too, with the risk that a few articulate members may hijack the discussion, leaving the large silent majority to swallow it.
- The SWOT analysis can be built on data collected through questionnaires and tests. For example, sampled members of the staff can respond to the MIPQ mentioned earlier in the chapter on Institutional Assessment. The data thus generated are collated to find a collective view of the staff perception of organizational strengths and weaknesses. Such a profile is then presented back to the staff for further debate and discussion so that a consensus emerges.

A SWOT profile becomes more acceptable when it is built through participative process, than any single individual's exercise, howsoever brilliant he/she might be. I have found better results in a three-step process of SWOT:

- Administer an institutional assessment instrument;
- Tabulate data to draw a profile; and
- Present the profile to staff for discussion, and develop consensus.

Quality Policy and Intervention Plan

Following the SWOT is the decision on quality policy. This is a serious matter – where do we start? It depends upon two considerations – where are you (your institution) now, and where do you want to go? While TQM is applicable to all categories of institutions, critical decision is on the quality policy. For locating your institution, a few relevant questions are:

- Do you follow an open entry or admit on merit alone?
- Have you been able to achieve minimum levels of learning – say, average transition rate of 80% and above? Average pass percentage at

Board/external examination of 70/75%?

- Have you been able to offer average level of facilities and learning opportunities in co-curricular activities?
- Have you been able to develop a satisfactory relationship with the local community that 'supplies' the students to your institution?
- Have you been able to achieve average level of classroom instruction?

These are only a few sample questions. The answers to these questions should guide the definition of quality management policy. While every type of institution can offer enhanced services in one or other area, a strategic policy is to build general services to certain minimum level and then take on to enhanced services that would distinguish an institution from others. Despite the emphasis on all-round development, the first and foremost demand of the 'clients' is academic learning and excellence. If your institution is an open-admission school, you may consider identifying areas that are critical to success in academic quality improvement. If you have already achieved minimum basic quality and your institution is on the move ahead, it is time to decide for specialization. Point to be noted here is that enhanced services or specializations are to be built upon minimum basic services – these are not alternatives.

In the broader context of quality policy, the specific interventions are chosen. Kaizen, as a principle and practice, provides a sound instrument of intervention.

Kaizen

Kaizen is a Japanese term used to depict a particular approach to TQM. TQM is massive and holistic; it is, however, seen as a product of a large number of smaller interventions. Sallis (1996) defined it as "The philosophy of TQM is large scale, inspirational and all-embracing, but its practical implementation is small-scale, highly practical and incremental. Drastic intervention is not the means of change in TQM." TQM is incremental and success-oriented; it builds success on success. Kaizen professes identification of relatively innocuous, but important area for intervention; then slowly build on the achievements. This provides sound entry point for TQM in an organization and also builds up strength to against resistance to innovation. The strategic issue is identifying critical areas where intervention is likely to succeed and make significant contribution to the missions and goals.

Let us take an example.

Box 11.1. A Kaizen on staff development

The Principal of a College of Education in Mumbai mobilized a few audio cassette recorders and some blank cassettes. He told his academic staff that he wishes to develop a collection in the library of audio cassettes of lessons. He asked the teachers whosoever was willing, to take a cassette recorder and blank cassettes to the class and record their lectures. The teachers were also asked to take the cassette and the recorder, if needed, at home and listen to the recorded lecture. Should the teacher be satisfied, the cassette can be deposited with the librarian. Should the teacher be not satisfied, he/she should erase it and re-record the next class. The teachers were not expected to get feedback from any other person, including the principal, however, the teachers were free to consult anyone he/she liked.

Besides developing the collection of audio lectures, classroom instruction improved substantially, for, every teacher took auto-feedback. In fact, during the first four-five months no audio cassettes were deposited in the library, despite the cassette recorders and cassettes were being issued by the teachers.

The case presented above indicates a simple intervention but with long term implications. On the one hand, the library was getting enriched with new form of instructional material. These cassettes can be used for reinforcement of learning to those who need to repeat and those who missed the class. On the other hand, this was a shuttle move to improve classroom instruction by the teachers.

Let us examine another Kaizen (Box 11.2 on page 184) in a secondary school. This Kaizen is at the proposal stage, rather at the early stage of implementation. This intervention has been designed by a group of teachers for improvement of learning skill among grade VIII students.

Kaizen is an important component of quality policy, particularly for designing the intervention plan. Intervention plan has to be based on overall quality policy. In this regard, the following issues and action points are worth considering:

1. Develop a long term (about 7 to 10 years) as well as medium term (about 3 or 4 years) and short term (1year) policies.
2. Prioritize areas of intervention and sequence them logically. For example, if you decide to improve academic performance of students, you may have to first upgrade the teachers.

Box 11.2. A sample Kaizen: improving learning skills

Five subject teachers teaching English, Hindi, Mathematics, Science and Social Sciences in Standard VIIIA in a secondary school decided to jointly work on improving learning skills of the students. In their own understanding, learning skills comprise:

- 1) Reading speed and comprehension
- 2) Listening speed and comprehension
- 3) Observational skills, and
- 4) Skills of interaction

Each teacher will develop an assignment for measuring reading speed and comprehension in their own respective subjects. Similar exercises will be developed for measuring listening speed and comprehension, and observation. For building interactional skill, the teachers will assign certain curricular problems, based on the prescribed content to be solved jointly by groups of five or six students. The teacher will review the solutions in the whole class. The exercise on building skills of reading and observation will be a five minute exercise once every fortnight by each teacher. This would mean that six teachers together will make 12 interventions every month on improving learning skills among the students. The reading and listening skills will be measured every three months. The performance of the students will be reviewed at the end of the year.

This collaborative exercise of all the subject teachers concentrating on one element of learning skill development is likely to enhance learning capability and hence performance of students. As the class moves up, the exercise can be continued with greater rigour. It is also possible that the success of the experiment by the five teachers may find ripple-effect in other classes.

3. Identify one significant but easy to intervene area so that success is ensured.
4. Identify areas where intervention can have multiple and multiplier effect.
5. Involve people in developing the quality policy.
6. Make full use of learning from SWOT – e.g. an otherwise average school in academic performance should continue to strengthen its strong social interface tradition along with its new emphasis on academic quality improvement.
7. Identify resources needed to successfully implement the quality policy; identify the sources and mechanism of mobilization and your strategy for optimal utilization of resources.
8. Ensure that the quality policy is a written/printed document and every body has access to this.
9. Ensure provision within the quality policy and strategic plan for periodic review and mechanism for modifications.

Important strategy is to raise relevant questions vis-à-vis quality management in your institution. The answers to such questions should draw up the list of intervention areas and activities. In order to ensure continuous quality improvement, the questions must be developed and prioritized collectively in groups. Participation is the hallmark of management of quality. This too is a strategic component of strategic planning.

Cost of Quality

There is a rather common belief among the educational administrators that quality is expensive and can be achieved only when there is large resource flow. This is a myth. There are specialists in TQM who have raised the slogan, 'quality is free'. Let us see a simple case. Average unit cost per year in secondary grades is approximated at Rs. 1500.00. If in a school average transition rate is about 60% and the student strength is say, 1000; 400 students stagnate every year. The annual cost of stagnation is a whopping Rs. 0.6 million where annual budget is Rs. 1.5 million. Similarly, as mentioned earlier, the annual national loss due to failure at the Board Examination is about Rs. 90,000 million. Indeed, quality can be free if this loss due to failure can be prevented.

Performance is a multivariate phenomenon ranging from home-related and person-related to school-related factors. There are school-related factors that might account for and explain more than 60 per cent of the phenomenon of stagnation and non-performance. Should the school-related variables be controlled, there will be significant reduction in stagnation and wastage. There are a number of Indian studies on mastery learning (Hooda 1982, Yadav 1984) that have demonstrated that large majority (about 80%) of the students can demonstrate mastery over the subjects only by moderating the instructional processes.

The critical importance in TQM is cost consciousness so that efficiency of every bit of investment may be assessed in terms of its contribution to quality improvement and management. From this angle, effective utilization of resources is more important than the quantity of resource. The human resource, the salary alone, costs more than 95% of the annual budget of an institution. Unless the human resources are optimized – quantitatively, where all teachers take all classes scheduled for them and qualitatively, where all teachers update them and go prepared to the class, any amount of investment will be infructuous.

The third element is the optimal use of physical resources – the library, laboratory, audio visual aids, sports and games facilities, gymnasium, etc. It is important to identify the resources – some are obvious, some are latent and unnoticed. The strategic plan for quality must accommodate and make full use of resources.

Cost consciousness and cost management are two other important components of cost of quality issue. Most often, we are not cost conscious. For example, what is the hourly teaching cost of a school teacher vis-à-vis hourly cost of another employee with equivalent level? Let us calculate.

Table 11.4. Comparative cost per hour of teacher and non-teacher employees

Items	Non-Teacher Employee	Teacher	Remarks
No. of working days in a year	261-33-10-12=206	220-12-10=198	
No. of hours per day	8	6pdsx40m=4hours	
Working hours/year	1648 hours	792 hours	
Annual Salary	1,44,000	1,44,000	
Cost per hour	87	181	Teacher earns Rs 94 more than non-teacher employee of equivalent level per hour.

Notes: 1. As per stipulations, schools are expected to work for 220 days in a year including examination days. Schools have eight periods per day of 40 minutes each with one short and one long recess. Teachers usually carry a burden of about 30 periods a week or about 6 periods a day.

2. Non-teacher employees in the government, business establishments, industries work five days a week; enjoy 33 days of earned leave compared to the summer and autumn vacations of teachers. Both teachers and non-teacher employees enjoy 10 casual and 12 medical leaves.

The additional Rs. 94 (Rs.181 – Rs.87) is paid to a school teacher for preparation and professional upgradation through self-studies. There are arguments that teachers do lot of other works. The fact remains, that all that are preparatory to teaching and hence, this is practically the hourly cost of teaching. The argument is that a teacher needs to prepare to be effective in the classroom, to be effective in student assessment and all the eight areas mentioned earlier in

the chapter on human resource development. Indeed, the additional Rs. 94.00 per hour is invested on teacher for preparation. Whenever, the teacher goes unprepared, the preparatory cost of Rs. 94.00 remains unutilized. This approach of costing actual cost of teaching and teacher utilization is also corroborated by the International Institute of Educational Planning, Paris (IIEP, 1990).

Series of similar costs can be calculated. The issue of quality revolves around the return for this investment. Now, the hourly cost is the same for two teachers in the same school. But the teacher who regularly prepares and teaches according to plan gives better return than the one who takes it casually. Cost consciousness implies developing sensitivity about costs and likely returns keeping quality in focus.

Cost management is the natural corollary to cost consciousness. Cost management implies investment decisions. For example, for improving academic quality, where should you invest? On staff development or instructional material or audio visual aids or alternative instructions or on all? The investment decision depends upon the estimation of rate of return for improvement of quality.

A few statements are valid for all Indian institutions. Firstly, academic staff is the most critical factor for success. Secondly, we are not deriving enough from them. Thirdly, we are not investing enough on staff development. Majority of the programmes, wherever they are, offer conventional programmes contributing to maintenance learning and not innovative learning (Botkin, Elmandjra, and Malitza, 1979). Strategic planning must accommodate a detailed mechanism of human resource development.

Planning for Implementation

There is a fancy among Indian planners that 'we are good planners but bad managers'. This is often said by the arm-chair planners who are miles away from grassroots realities. No plan is a good plan unless it can be implemented and managed. TQM as a philosophy does not offer any cozy corner for romanticism in planning. Plan must be implementable. Planning for implementation is that component of strategic planning which details out the activities, time frame, resource allocation, monitoring details with indicators of success. In other words, planning for implementation looks for answers to a series of questions associated with each of the seven stages of planning mentioned earlier. Questions pertain to activities, indicators of success, resources and monitoring. Just two sample questions for each of the four criteria for each of the seven stages are given in Table 11.5.

Table 11.5. Sample questions for developing planning for implementation

Seven Stages of Strategic Plan	Activities	Indicators of Success	Resources	Monitoring
Belief, Vision, Mission, .	What are the activities to be undertaken for developing a shared vision of the schools? How will the vision be reduced to missions, goals and activities?	Do you have a vision and mission statement? How feasible is the vision and mission?	What financial resources are required? What expert resources are needed?	How would you monitor the process of development of Vision, Mission, ... ? How would you ensure the quality of vision, mission?
Learner Needs Assessment and Customer Education	What activities will be undertaken to assess learners' needs? How would you educate your customers?	Do you have a document on learner needs? Do you have a report on customer education and its results?	What financial resources are required to assess learner needs? Who will carry out the learner need assessment project and customer education?	How would you ensure timely accomplishment of learner need assessment and customer education programs? How would you ensure quality and reliability ?
Institutional Assessment and SWOT	Which tool would you use to assess your institution? When and to whom would you administer? How would you develop a SWOT sheet?	Do you have an institutional profile? Do you have an agreed upon SWOT sheet?	What financial resources are required? What kind of expertise is required to carry out institutional assessment and SWOT and where will you get that expertise from?	How would you ensure timely accomplishment of tasks? How would you ensure quality of assessment and organizational diagnosis and their acceptability among staff?

Continued

Quality Policy and Intervention Plan	When and how would you develop your quality policy? How would you develop intervention plan and ensure that these contribute to achievement of quality policy?	Do you have a statement of policy, e.g. standards to be achieved? Do you have a set of activities identified to achieve the policy?	How much financial resources are needed to develop the quality policy and intervention plan? Where would you derive that financial resource?	How would you ensure timely development of the quality policy and intervention plan?
Cost of Quality	How would you work out the differential contribution of investment items on quality? How would you estimate financial requirements for implementing the interventions planned out?	Do you have a cost analysis of spending on various aspects of schooling vis-à-vis their contribution to quality? Do you have a worked out cost estimation for each activity planned out for quality management?	How much time do you need to assess the differential contribution of investments to quality management? Who will carry out the cost studies?	How would you ensure that intervention plans indeed contribute to and lead to fructifying the quality policy?
Planning for Implementation	What will be the mechanism for developing a plan for implementation? How would you identify the factors that can be roadblocks in implementing strategic plan?	Do you have an agreed upon PERT Chart for implementing strategic plan? Do you have a document identifying the risk areas?	How much financial resource is required to implement the plan? Who will be responsible for each activity?	Does plan for implementation take into account cost of activities? Are responsibilities fixed for each activity to an individual or a group?
Evaluation and Feedback	What kind of tools would you use for evaluation and feedback? What would be the frequency of such evaluation? How would you ensure that evaluation is objective, and not coloured with self-fulfilling prophecies?	Do you have an documented plan for evaluating the activities? Do you have a document on how the feedback will be given and how mid-course corrections will be carried out?	What financial, human and time resources are required to evaluate and give feedback?	Do you have a schedule for evaluation? How would you ensure that evaluation is neither a fault-finding nor a self-fulfilling prophecy?

You would probably notice that questions have also been raised on Planning for Implementation. These are only sample questions. Each TQM School must be able to raise relevant questions on the basis of its own background and personality.

Evaluation and Feedback

A strategic plan is incomplete without the mention of the frequency and mechanism of evaluation and feedback. The basic purpose of evaluation and feedback is quality assurance and not quality control. Evaluation does not mean simply to pass judgments of success or failure. The purpose is to assess the distance traversed from the place of origin and distance to be covered to reach the destination. These are directly linked to the milestone concept, mentioned earlier. Thus, evaluation has to be formative; it should provide, besides achievement, the weaker aspects of the plan implementation, warning signals on prospective disasters so that mid-course corrections can be planned and executed.

The frequency of evaluation should depend upon the kind of activity that has been planned. It can be carried out monthly, quarterly or half-yearly for the annual plan; annually for the short-term and bi-annual for the long-term plan. It is extremely important that strategic plan should contain details of frequency, method of evaluation and persons responsible for evaluation.

In order to translate strategic planning with involvement of all, I have found use of a form or blank as useful. A sample form is given below:

Figure 11. 5. Institutional planning form

Target Year	Goals	Activities	Responsibility	Monitor	Resources
2006					
2005					
2004					
2003					
2002					
2001					

This form has been used to develop a perspective plan for a school. This is usually done by a group of teachers in a committee; the draft perspective is presented to the whole faculty. On the basis of discussion and consensus, the perspective is finalized.

Conclusion

Strategic plan is, more or less, the culminating point of all the discussions so far done on TQM. We have reviewed three different models and proposed a model that should fit in Indian situation. What is important is to identify the basic pattern and style of your institution (Murgatroyd and Morgan, 1993) and fit in the model. In the process, you may develop a plan that is unique for your school. Real indicator of success is when the strategic plan reflects that uniqueness of the school.

Implementing Total Quality Management

Introduction

Implementing TQM is translating the strategic plan into action. This chapter is more in the form of a conclusion flagging a few issues, once again, for consideration, preceded by a brief overview of the processes of adoption of innovation.

Most educational institutions run routinely, often without a plan of development. The developmental efforts that are rare are usually piecemeal approaches. TQM is in sharp contradiction to the contemporary practice. It banks upon holistic thinking, participative continuous development through dynamic long term planning — dynamic, since the plan is also subjected to continuous review and revision. TQM is an institution building paradigm, indeed an innovative way of managing change. It is important to ensure acceptance and internalization of the concept of TQM, and its theoretical constructs. It is not necessary that people must use the term 'Total Quality Management' which may be construed as a 'jargon', 'old wine in new bottle' or as 'another management fad', etc. Same or similar approach to TQM has been termed as CQI—Continuous Quality Improvement (Frazier, 1997), Return of Quality – ROQ (Weller 1996), QMP—Quality Management Plus (Kaufman and Zahn, 1993). What is important is absorbing the basic spirit of the movement – concept of quality in education and techniques and strategies of its management on a continuing basis.

Managing Change

Managing change is an extensively researched area, both in India and abroad (Mukhopadhyay, 1981, 1989, Rogers and Shoemaker 1971, Havelock, 1973). There are several dimensions and a few basic contentions in the management

of change. Firstly, change is the function of successful adoption and institutionalization of innovation. An innovation is an idea perceived to be new by an adopter; the newness can be in the content of the idea or in the method of adoption. An innovation passes through several stages of adoption. The management of change is steering an innovation through various stages till it is institutionalized. The people in the organization react differently to the same innovation. Several agencies and processes are involved in adoption of innovation, and resistance is natural company of innovations. In this case, TQM is the innovation – a new approach and strategy for the management of quality, the change. Let us review a few outstanding parameters that have direct relevance to implementation of TQM.

Stages of Adoption of Innovation

From both experience and research studies, the adoption of innovation can be seen to pass through five stages (Figure 12.1) (Rogers, 1962):

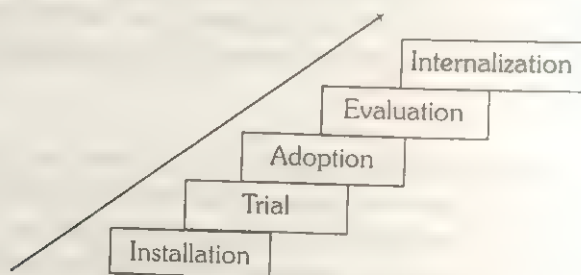


Figure 12.1. Stages of adoption of innovation

- *Installation* signifies the first implantation of the idea in the mind of a potential individual adopter or an adopting organization;
- *Trial*, at this stage, is the mental exercise for assessing feasibility, planning for adoption and also assessing adverse consequences;
- *Adoption* is the actual translation of the idea at the field level – pilot or full scale;
- *Evaluation* is the assessment of the process efficiency of adoption and impact of the innovation; evaluation in this case is not summative, basic intention being corrective to final adoption; and
- *Internalization* is the mechanism of subsuming an innovation into the system, rendering it out of the 'zone of innovation'.

Thus, TQM as a new philosophy and innovative strategy for quality improvement will go through these five stages. These stages, however, are not sacrosanct and each one actually comprises several micro-stages.

Categories of Adopters

As soon as an innovation is installed, it generates different reactions among the potential adopters. On the basis of their reactions and dispositions to the new idea, the adopters can be classified into a few categories, namely,

- a. **Innovators** — who actually innovate the idea itself or modify an existing idea in their own unique way, and try it out,
- b. **Early Adopters** — who react positively to a new idea or practice immediately and take to adoption,
- c. **Adopters** — wait on the fence and watch the experiences of innovators and early adopters, and then adopt.
- d. **Late Adopters** — are the reluctant respondents to a new idea, usually they are forced to adoption, and
- e. **Laggards** — are the confirmed rejecters of innovations.

These various categories of people are distributed more or less normally — both innovators and laggards are the smallest percentage of people in the organization, and adopters are the largest single group.

This categorization of persons in the organization can be superimposed on the Can-do-Will-do matrix (Figure 12.2) mentioned in the chapter on Human Resources Development.

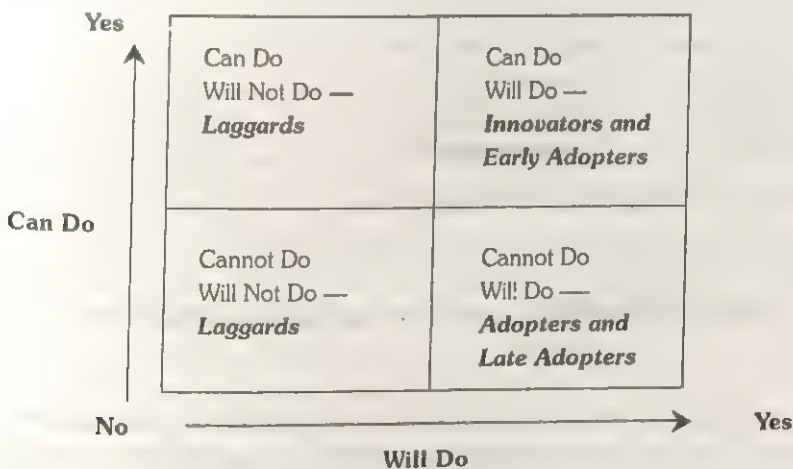


Figure 12.2. Categories of adopters on Can-do-Will-do matrix

People who are competent as well as willing are either innovators or early adopters. The competent but unwilling as well as incompetent and unwilling

staff are the laggards. Willing but not competent persons largely belong to the categories of adopters and late adopters. The willingness becomes the determining factor. As TQM is introduced in a school, teachers and non-teaching staff react differently. A perceptive principal can identify the innovators, early adopters, adopters, late adopters and laggards among the staff.

Structural Aspect of Change

There are several ways the mechanics of change can be presented. Let me take the most frequently used framework and most acceptable premise: '*Change as a function of adoption of innovation*'. This brings us to at least four components of the structure:

- a. One who communicates innovation, say, Resource System;
- b. To whom innovation is communicated for adoption, say, Adopter System;
- c. Innovation itself; and
- d. The process through which innovative ideas are transferred, say Communication Channel.

Should we put them in the form of a diagram, it would look like

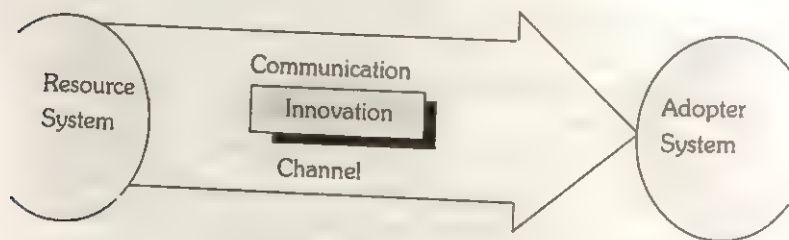


Figure 12.3. Model of change: one way dissemination model

There are two other relevant questions. Once the innovation is communicated and the adopter system initiates steps for its adoption, it may find some difficulty. Hence, there has to be a provision in the system for sending problem messages from adopter to the resource system and a reverse path sending solution messages from the resource system to the adopter system. The revised diagram, hence, looks like –



Figure 12.4. Communication of innovation - two-way loop

- Resource system, in this context, is an individual or an organization who/ that acts as the sources of innovation and also that acts as the expert source on techniques of adoption of innovation. Three types of resource agencies are prevalent in education, namely academic, administrative or bureaucratic, and non-formal and non-governmental agencies, like professional groups, professional associations, voluntary bodies, etc.
- The second component is the innovation itself. 'Innovation', as mentioned earlier, is an idea or a practice 'perceived as new' by implementers. There is no absoluteness of novelty attached to the idea and meaning of an 'innovation'. A number of studies, both internationally and in India, have shed light on the characteristics of innovations and their adaptability for ushering in change. Some of the characteristics that facilitate change are: Relative advantage, Simplicity or Complexity, Compatibility, Divisibility, Communicability, Value loading, and Scientific status of the knowledge.
- Communication, the third element in the model, signifies conveying a new idea to the potential adopter through a medium. Research on communication of innovation has thrown significant light on the effect of difference in status between the communicator and communicatee, community norm vis-à-vis communication, choice of media of communication and efficient use of the media, etc.
- Adopter organizations are schools, colleges, universities, etc. However, there are evidences that individuals and small groups play significant role in management of change within an organization. They also contribute to organizational resilience. Within an institution, an individual or a group can be the adopter system.

Resistance to Change

Resistance is the law of innovation. In fact, the dynamics of change comprises two sets of forces – one set of force as released by innovators and early adopters who receive innovations with enthusiasm; and the other set of forces as released by laggards and late adopters. Lewin's (1951) famous Force-Field Analysis Theory contends that prior to change, these two sets of forces maintain a state of equilibrium. This state of equilibrium gets disturbed by introduction of innovation. The fate of an innovation depends upon the equation of these two contesting forces. Hence, while planning for implementation, recognition of resisting behaviours and forces are important.

The empirical studies (Mukhopadhyay, 1981) indicate that resistance to innovation occurs due to attributes of the individuals in the organization as well as the qualities of the organization itself. Conservative attitude, sense of insecurity and fear of failure, low self-esteem, closed mindedness, inability to sense needs, unwillingness to work or lack of motivation, inadequate exposure to mass media, inadequate contact with change agents and resource agencies are some of the personality characteristics that are non-conducive to adoption of innovation. Similarly, role conflict, lack of training, lack of clarity of innovation, lack of technical competence, non-availability of literature, lack of access to guidance, work load, fatigue from innovation, unrealistic time target, etc. are some of the other characteristics of individuals who tend to resist innovations.

Organizational factors pertain to both external and internal mechanisms. External factors are demand for change in social relations, threat on dynamic equilibrium of the system, lack of openness, lack of permeability from one layer of organization to another due to coding systems and system myths, localiteness, lack of communication and linkage with resource systems, etc. Internal factors are division of labour, hierarchic organization, reward for traditional behaviour, interference of higher management, organizational climate – closed type, physical distance between the sub-systems, inadequate financial and physical facilities, size of the organization – small in particular, directive and autocratic leadership, cohesive small groups, lack of autonomy and involvement in decision making, peer criticism, sense of imposition, vested interest, etc

These resisting forces are also potential dangers for adoption of TQM as a strategy for management of quality.

TQM and Management of Change

Total Quality Management in Education is one approach to management of change. Innovation in a school can be both horizontal as well as vertical and deep. Horizontal innovations and changes imply expansion and diversification

of activities in an institution. 'Deep approach', means qualitative changes or unlocking the culture of change (Weller, 1998) in terms of depth and height of the services (Basic versus Enhanced services mentioned in the chapter on Strategic Planning) provided by the institution. TQM essentially looks at the process of change for depth and height. However, it does not exclude diversification or expansion wherever needed for qualitatively transforming the institution. Essentially, hence, Total Quality Management attempts change with a focus. The focus is on quality.

As mentioned throughout the text, Total Quality Management approaches quality as an institutional culture. In an institution, it becomes everybody's business - business to strive for excellence — '*Yogaha Karmasu Kaushalam*' — skillfulness in work (whatever one does) is striving towards unity with God. When a sweeper sweeps the floor, he or she does it with the best of his or her ability -- not a single unwanted particle of dust is to be seen. Teachers teach to the best of their ability and to the entire satisfaction of students and parents. The principal manages the institution with the best of satisfaction of staff, students and parents. The good definition of quality in TQM is 'quality at every step, by everybody and for everyone (client) related to education'.

Quality, as the culture of the school, implies the concept of totality rather than partial application. Quality, in this context, cannot be just one item of the institution where rest of the things slog. In other words, a school with an excellent result but students without any achievement in the sports and games or cultural activities or suffering from the drug addiction cannot be considered as quality school from the angle of TQM. Extending the argument, the TQM endeavours total qualitative development of the students – physical, mental, emotional, intellectual and spiritual – the five planes at which humans live simultaneously. The total quality must endeavour to upgrade and optimize living at all the planes. An institution that approaches to strike at all the planes to create a new vision of development is, in reality, practising total quality management.

Alongside the emphasis on totality and systems thinking, Kaizen is an important principle and practice in total quality management. There have been significant debates about piece-meal social engineering versus holistic massive changes. Kaizen brings in the strategic intervention concept and entry point for innovations. Every innovation activates the countervailing forces that resist innovation. Opening several fronts at a time activates and maximizes the countervailing forces rendering the innovation the risk of failure or deformity. Kaizen professes a strategic approach to choose an activity as an entry point to holistic organizational change. Small project based intervention, one at a time,

is a well tested technique. Complicated and more comprehensive interventions can be built upon the success of the smaller efforts. The staff must taste success and develop confidence on innovations and in themselves. The choice is for developing a culture of change over quick results. Kaizen principle enlarges its scope steadily and progressively to cover all aspects of the institution.

If we super-impose the management of change modalities, particularly the categories of adopters of innovations and stages of adoption of innovation with the total quality management approaches, it becomes evident that the principal ought to know his or her staff in terms of their disposition towards innovation and the categories of adopters each one of them belongs to, so that appropriate strategies may be worked out to deal with them and derive the best advantage. On the other hand, while using Kaizen principles of introducing small but definite innovation, stages of adoption and internalization of innovation becomes relevant and important.

Road Map

There are several alternative ways in developing the final plan or road-map for implementing TQM in a school. Crawford (1990) recommended eight stages in implementing TQM, namely,

- Vision – how the institution would like to be – what would constitute its greatness?;
- Define mission – compatible with vision;
- Set objectives – transformed into specific, attainable, measurable goals;
- Customers' requirements broken down into elements;
- Detailed process to satisfy the customer needs;
- Specify materials, facilities and standards to be met;
- Plan to bring together human, physical, and financial resources; and
- Built-in quality assurance mechanism.

Crawford warned that development of TQM culture will meet with resistance: also, cultural change alone is not enough – to develop TQM ethos, there have to be adequate efforts and investment in staff development.

Frazier (1997) suggested six-stage road-map, namely, prepare, assess, plan, deploy, sustain and break-through. Navaratnam (1997) offered a six-stage quality journey plan:

1. Awareness and Self-Assessment;
2. Training and Team Building;

3. Quality Planning;
4. Implementation Process;
5. Comprehensive Evaluation; and
6. Continuous Improvement.

Navaratnam elaborated each stage with a detailed flow diagram.

Yudof and Busch-Vishniac (1996) insisted that the participants must be given instructional material on TQM well in advance, and they should be given specific assignments for developing position papers. This, the authors contend, will keep them focused. Further, TQM is a post-modern development, hence, dependent upon the new information systems and technology for measuring progress towards quality journey. Chaffe and Tierney (1988) identified nine areas to provide a broad context within which to consider application of TQM. These are:

1. Find internal contradictions;
2. Develop a comparative awareness;
3. Clarify the identity of the institution;
4. Communicate;
5. Act on multiple, changing forms;
6. Treat every problem as if it has multiple solutions;
7. Treat every solution as a fleeting solution;
8. Look for consequences in unlikely places; and
9. Be aware of any solution that hurts people or undermines strong values.

Chaffe and Tierney's nine stages are essentially process-oriented. Indeed, Sheward's (1931) classical PDCA cycle also offers a scientific basis for process development.

The three models proposed by Crawford, Frazier and Navaratnam have lot of common grounds, e.g. Navaratnam's Awareness and Self-Assessment is similar to Frazier's Prepare and Assess, Quality Planning is Plan, and what is Implementation Process for Navaratnam is Deploy for Frazier. Yudof and Busch-Vishniac adds the dimension of preparedness through advance reading and remaining focused through assignments on writing memorandums and papers. Chaffe and Tierney includes in their list, some meaningful caution so that resistance is reduced. The lessons derived out of these models and statements can be meaningfully gelled in to develop a working model for implementing TQM in schools.

TQM is a continuous journey. Various authors in various languages have said it. There is a beginning after the break-through; TQM is continuous search for new break-throughs. Hence, the process of implementation fits better in a spiralling model, for that accommodates the spirit of continuity of improvement. Accordingly, the process can be seen comprising:

- Prepare the Ground;
- Define the Base-line;
- Set Targets;
- Plan for Implementation;
- Implement; and
- Revise Base-line and Take Off.

Prepare the Ground

The first important step in implementing TQM is creating an environment that is conducive to the concept of quality. To begin with, the school should tolerate the concept; then move on to accept and receive it with enthusiasm. It is good to begin with some buzz sessions – expert presentations to staff on quality of education, indicators of quality, assessment of quality, etc. Natural corollary will be informal discussion among staff in the corridors and staff room ranging from bitter criticism by laggards to enthusiastic appreciation by innovators and early adopters. Let that be, so that the word quality may get into the social lexicon of the school. In specific terms, the following are some of the concrete steps to prepare the ground:

- Talk informally to those who are receptive to new ideas;
- Give them short papers on TQM, theoretical and cases to read; avoid giving books;
- Discuss at intellectual level the strengths and weaknesses of the idea of TQM; do not defend TQM, for your goal is institution building;
- Create opinion leaders for TQM;
- Be watchful if some one is emerging to try out a new idea of TQM; encourage him/her;
- Once the subject of TQM has transcended to more than 50% of the staff through informal chats, consider holding staff seminar on TQM in Education; it is safe and wiser to invite external expert to introduce TQM to staff;
- Use examples of adoption of TQM; show samples of institutional evaluation proforma to prove that it is non-threatening, let them try out themselves, and

- Allow the ideas to sink and get absorbed; repeat the exercise till you are convinced that majority of the staff have understood the concept and are prepared to try it out.

The second preparatory activity is training and development of the staff and team building. The emphasis in training, as mentioned in the chapter on human resource development, is on empowerment of people in organization – much beyond the goals of conventional training. Quality is a team game. It is not additive, indeed it is productive. Individual excellence put together does not create the organizational and systemic quality. The quality teams can be developed on the basis of projects and project teams. Teams can be smaller or bigger depending upon the need of the project. Important consideration, however, should be 'the more the better'. Every effort must be made to involve everyone of the Institute in the quality teams. Building teams is difficult, particularly surviving the stage of storming, discussed earlier in the chapter on Team. But it is necessary.

The third element of preparation is establishing the consistency of purpose. Since total quality management is the other name of continuous improvement, it is important that the entire organization is prepared to accept it as an ongoing process and the constancy of purpose is visible and articulated.

Define the Base-line

Before we begin our journey on continuous quality improvement, it is important to define the base-line – the benchmark against which developments and improvements can be checked. Institutional self-assessment is necessary to develop the base-line so that one can examine whether, over a period of time, an institution is moving forward or remaining unchanged. Navaratnam (1997) includes self-assessment as part of preparation. Three clear steps need to be taken to assess the state of the art of the institution.

The first and foremost step in assessment is either to develop, adopt or adapt an institutional evaluation instrument. There are good number of instruments both from Indian as well as western sources. In fact, almost all books on Total Quality Management provide one or two sample instruments and/or instruments that have already been used and tried out for assessment of institutions. Each instrument has its own strengths and weaknesses. Some are very comprehensive, hence lengthy. Some are very short and crisp, hence miss out on the details. In this document, I have provided MIPQ. Given the uniqueness of each institution, it is a good practice to adapt these questionnaires to suit the local needs.

The second aspect of assessment is to create feasibility of decision-making on data and facts. In other words, the second aspect of assessment is to examine the amount and quality of data and facts that are available on record in the Institute; the quality of data in terms of their reliability, comprehensiveness, recency, etc. The purpose of assessment is to build a decision support system. Hence, upgradability and retrievability are also important considerations.

The third component is SWOT analysis where the members in the organization collectively analyze and understand the organizational strengths, weaknesses, opportunities and threats. In fact, SWOT subsumes data generated through institutional assessment. Yet, it is more than simple data, to create descriptive profile, indicative of relative strengths and weaknesses. SWOT accomodates, besides facts, feelings, perceptions and understanding of the organization and inter-personal processes. For organizational development, none of these can be ignored.

Set Targets

An important component of preparation is developing vision for the institution. There are two different parameters of vision. One parameter is vision on a time-frame, namely, short-term, and medium-term and long term. On the issue of long-term and short-term thinking, it is worth noting the wisdom of Peter Drucker (1974): "Long-term thinking is learning the future by understanding consequences of what we do today. Long-term thinking requires willingness to forego short-term benefits that undermine future well being. Such thinking is congruent without knowing our mission and fixing on our customers with systemic improvement and continuing human resource development". The second parameter is on spatial term — micro, macro and mega scenario (Murgatroyd and Morgan, 1993). Vision has to be either collectively developed or collectively adopted and accepted. Should the principal be strong in visualizing, he or she can develop a vision and initiate intense and frank debate and discussion with the staff so that either the vision as it is, or in the modified version, is accepted psychologically by the staff. Once the vision has been clear and accepted, it is necessary to reduce it into component missions, goals and targets.

Planning for Implementation

Having looked at the theoretical parameters, let us now list a few concrete steps to translate the concepts into action. All the subjects described below maintain one cutting theme and, that is, participation and participatory process. That is

true in case of development of vision, understanding of the school as well as planning for the future.

Step 1. An Essay on the School: The first exercise is writing an essay on the school. Collect the teachers and other staff in a hall for about 20-30 minutes during the recess or on a Saturday afternoon. Ask each one of them to write an essay on the school in not more than 500 words. Do not give any outline; let them write whatever they wish to. To maintain anonymity, they need not sign the essays. If the number of teachers and staff in the school is very large, say 100+, you can sample teachers and staff to include about 20. There are several ways of sampling. You can arrange their names in alphabetical order and choose every 5th or 7th or 10th person so that total number comes to about 20. Another possibility is stratification on the basis of levels, subject specialization, age, gender, etc. You can select 20 teachers so that they represent all these different segments and any other that you consider important for the school.

Each essay is in fact a documentation of the perception of a teacher or a staff about the school. You would be surprised and amused to see the enormous difference in their perception. Understanding of this perceptual difference is extremely important. You should carry out content analysis of these essays to understand differential perception of the staff about the school. Another strategy is to present the essays in another session of an hour or so and allow the teachers to discuss freely on each essay. It is a good idea to allow buzz sessions where teachers in twos, threes and fours discuss among themselves their different perceptions about the school. These perceptions will indicate the beliefs of the staff. As mentioned earlier, our intentions and actions are built up on the beliefs; beliefs are the foundation. This exercise provides an opportunity to articulate belief of each individual which otherwise is a secret. This also provides an opportunity to share and cross-check each other's belief and bring it into open. Properly conducted, this exercise can bring in a relatively more common and more rational understanding and belief about the school.

Step 2. Identification of Areas of Improvement - This is another interesting exercise. It is quite common to find teachers and staff complaining about the school - about what is wrong where. One interesting exercise is to ask the teachers and the staff to list the areas for improvement of the school. Once again, call them as a group at one place and administer this assignment to be completed in about ten minutes. It is good to specify a minimum number of improvement areas that must be identified by each

individual. In my experience, it is good to ask a minimum of about 20 such items to exhaust their diagnostic skills.

As a follow-up to this listing, the areas of improvement identified by various members of the institution, can be compiled and tabulated to find common as well as divergent areas of concern. Once the compilation and tabulation is done, it is necessary that the information is fed back to the group. Once again, please allow them to discuss, both formally and informally, in buzz sessions. This will again bring convergence in their thinking regarding problem areas of improvement in the school.

The most common area of improvement recommended in such a exercise will be infrastructure and facilities. The next in order will be improvement in others. Rarely, if ever, you are likely to come across improvement of self as an area of improvement. These are again based on the belief: (a) I am at my best; (b) whenever I do not perform, it is because of lack of facilities; (c) my performance is not as much as I could because others are not good enough, etc. Even if the issue of self-development figures with one member of the group, bring that to sharp focus and pursue for consensus. Let me quote one of my experiences.

I was working on these exercises with a College of Education with small but very competent and committed staff. Their essays indicated their tremendous sense of satisfaction and self-confidence. During discussion, some of them did not hesitate to claim that they are, indeed, the best in the country. Such was their belief. On the item of listing improvements, it was infrastructure and facilities all the way. Nothing else, except one teacher indicating the need for professional development. Taking out that statement, as if unnecessary since they are the best, I asked two apparently innocent questions:

- a) How many papers did you write and got published during the last one year?
- b) What are the research projects you have completed or you have at hand now?

When the answer from every one was 'nil' to both the questions, they started questioning their belief. They started asking counter questions: on what kind of theme can we research? How should we develop proposals? etc. It is rather common to indicate the fingers onto others and the system for the non-performance and poor quality. It is important to diagnose individual and collective shortfalls and identify areas of improvement.

Step 3. Institutional Assessment: The previous two exercises are essentially qualitative and perceptual. Also, they are not necessarily structured. The third exercise is carrying out the institutional assessment which is essentially structured. I have provided instruments as referred in the chapter on Institutional Assessment. The institutional assessment generates both qualitative and quantitative data on which the profile of an Institute as well as its pattern of growth can be easily diagnosed. For example, in one of our exercises, we found that in one of the private schools, the students' enrolment had grown from 1400 to more than 2200 during the last five years whereas the number of teachers remained constant at 136, the school classrooms at 62, one overhead projector, etc. There are several other such areas of trend data that can be used to assess whether there are changes and development of the school, and if so, in what ratio. This issue of institutional assessment has been dealt extensively in an earlier chapter. You may like to go back and review the chapter.

Step 4. SWOT: We have discussed SWOT in the chapter on Strategic Planning. These can be derived out of the essays on the school as well as from the data on Institutional Assessment. I still prefer development of SWOT sheets. Please call the teachers and staff in a session of about 20-30 minutes and provide each one of them the assignment to fill-in a pre-designed SWOT sheet. Ask each one to write at least 4 or 5 items in each cell. Once the staff members have filled-up the SWOT sheets, the identification under each head of Strengths, Weaknesses, Opportunities and Threats should be compiled and tabulated. The data should be fed back to the staff. This should be discussed at length so that the staff produces one agreed list of Strengths, Weaknesses, Opportunities and Threats.

Step 5. Vision, Mission and Goals: The next exercise is to build up a shared and acceptable common vision, a mission and a set of goals. In a previous exercise, you have asked the staff members to write 20 improvements to be brought about. Drawing from that exercise, you can now ask the staff members, again organized in a hall for about half an hour, to write a brief note on describing the school after 10 years, after five years and after three years. Pointed questions are: what should the school look like after five years? You may consider providing a loose structure for recording the vision – see the format given in Table 12.1.

Table 12.1. Format for vision statement

Vision	10 years	5 years	3 years	Comments
Teacher Quality				
Student Quality				
Programmes				
Performance				
Infrastructure				
Reputation				
*				
*				
*				

What should happen to the school after say, five years? The notes should be subjected to content analysis to find common grounds as well as to find uncommon and divergent visions of the institution. This output should be fed back to the group encouraging them to discuss and debate. The debate should be carefully steered to converge on to an acceptable vision or acceptable picture of the school after ten years, after five years and after three years.

Described earlier, mission is unbundling of the vision. In the next exercise, the participating staff should be asked to state the mission and even goals for achieving the vision. You will again find reasonable amount of difference in terms of statements of missions and goals to achieve the same accepted and shared vision. These can again be collated, tabulated and presented back to the respondents for a debate and discussion. Different dimensions of the vision can be assigned for different groups constituted out of all the respondents. Although this reduction of vision into mission and goals can be achieved faster through group assignments, every member must remember that all these aspects are interrelated and interdependent. This process of conversion of vision into mission and goals may be tedious and time consuming. You may have to spend a couple of hours to finally come to a conclusion in terms of acceptable statement of missions and goals.

Step 6. Prioritization: By now you have lot of different, yet interrelated data on --

- Beliefs;
- Areas of improvement;

- Strengths, weaknesses, opportunities and threats;
- Vision; and
- A set of mission and goals.

Similarly, there are some intangibles:

- Participation of people on the organizational issues as a whole;
- Certain new skills in diagnosing, projection, etc. in the staff; and
- A new set of beliefs that the staff can speak on the whole organization and that they are important.

You know as much as the staff realizes that all the goals and all the improvements cannot be achieved at the same time because they require large human, material, financial and infrastructural resources. The trick is to prioritize and pick one or two items for implementation at a time. This should be done by asking the respondents to rank the goals in order of priority for the improvement of the institution. Should you collate the ranks, it should be possible to find and calculate collective ranking. This can be presented back to the group for further discussion so that the arithmetic ranking can either be endorsed or changed on the basis of the collective considerations.

In this context, schools often face a dilemma between accepting a simple but limited target vis-à-vis a target that is difficult but has far reaching implications. The advantage of choosing a simple but limited target is its achievability that, in turn, provides the taste of success. The disadvantage is that it touches the fringe of the system. On the other hand, experimenting on difficult targets with far reaching implications has the advantage of simultaneous qualitative shift in many areas of schooling. Because of the complexity, it has the risk of failure. In fact, the principle of Kaizen encourages one to take a small step forward and keep expanding the process to include more and more areas. The strategic approach is to choose some simple target that has limitless possibilities with far reaching consequences. Let me quote an example:

In the case of the college of education, mentioned above, the staff decided that nothing much can be done on infrastructure since it is part of a larger system and decision making is not within the reach of the college of education. They decided to work on an apparently innocuous area, namely professional development. The targets are simple:

- a) each one will read four books related to education in a year.

- b) each one will write two short papers for publication, and
- c) each one will have a mini research project.

Now, will completion of these three targets enthuse the teachers to read more, write more and research more in subsequent years? Will that become a part of institutional culture? Are classroom processes likely to be influenced by such professional developments? Is such impact on classroom processes likely to change students' performance? It is obvious that professional development will trigger off a chain of positive reactions in the institutions.

Step 7. Activity Listing: The next collective exercise is listing of activities. In this exercise, the TQM group will be asked to identify and describe the activities that will lead to achievement of the prioritized and selected goals. This could be developed on a workshop format where the TQM group can be divided into small groups of 5-6 persons. Each group can be assigned translation of one goal into a list of activities. The outcome of each group exercise should be placed before all the members for further discussion and finalization of the document.

While listing the activities, the participants should also specify the indicators of success so that activities and achievement of goals can be measured in real terms. These indicators should, as far as possible, be quantitative and measurable. Wherever these are qualitative, the group should spell out how that can be measured. For example, if a goal is stated as improving satisfaction on the job, which is apparently measurable, the group should be able to mention that a job satisfaction scale will be used at two different intervals of time to examine and assess shift in their satisfaction on the job.

Step 8. Resource Assessment and Allocation. Once the activities are finalised and the indicators of success identified, the next activity is the assessment of resources that are required to implement the activities. Four types of resources are important in this regard. These are financial, human, infrastructural and time. Against each activity, the group should be able to identify the amount of additional finance that would be required, if at all. Similarly, what kind of infrastructure would be required? Who will be responsible for implementing the activity and in what time frame? These should be developed in the form of a PERT chart or a table for ready reference (Table 12.2.):

Along with assessment of the required resources, it would be important to locate such resources. In the second part of the exercise namely allocation of resources, the principal and administration has to play a significant role because teachers may, or may not, be familiar with the kind of financial resources that are available in the Institute.

Table 12.2. Master chart (format) for TQM implementation plan

Activity and sub-activities	Indicators of success	Duration and date of completion	Person responsible for implementing	Person responsible for monitoring	Financial requirement and source	Infrastructure and physical facilities required and their location
Ex Creating a collection of lectures in cassette in the library	20 lectures in a year deposited in the library	One year	Librarian	Mr. Srivastava (who volunteered to take this up and coordinate with other teachers)	Rs. 5000 Student Fund	Four cassette recorders and 50 audio cassettes to be located in the library
X						
Y						
Z						

Step 9. Evaluation and Monitoring: At this stage, the group should carefully develop the mechanism of monitoring activities at every step and also the mechanism of evaluation so that success can be actually assessed. Please note that in the table above, there are two columns – one each on indicators of success and person responsible for monitoring.

The plan must indicate when and how implementation of the innovative activity shall be monitored and evaluated. Also, it should indicate the persons or teams responsible for evaluation as well as the method of evaluation and monitoring. Mid-course corrections are the basic purpose of formative evaluation and monitoring. The plan must indicate the mechanism of mid-course corrections or re-planning.

The whole set of exercises, described so far, should lead to a document. The document should comprise output of each stage of the exercises. The first

section can comprise all that describes the past and the present of the school. The second section will comprise the vision, mission and goals and their prioritization. The third section will comprise listing of activities, indicators of their success, financial requirement and allocation, fixing the authority and responsibility of selected staff for each activity, the time frame and the location where it would be implemented and the mechanism of monitoring and evaluation.

The subsequent stage would be actually carrying out the activity as planned. In one of the experiments in TQM, all members of academic staff accepted responsibility for their own professional development through planned reading, writing and researching. Two of the members were identified for monitoring the professional development efforts; and yet another two members from the same staff were identified to evaluate how well the monitoring is done. This technique of participative monitoring was effectively used by Hansen and Jackson (1996) in their application of TQM in classroom instruction. In a subsequent activity, the groups can interchange their roles. As a result, the group members pick-up the skills of both implementing as well as monitoring activity.

While the activities are identified, it is obviously a good idea to develop them in the form of projects; projects are time bound and goal oriented. They offer opportunities for greater objectivity in assessment - monitoring and evaluation. Project proposals should be documented. Project documents should also indicate the kind of resources that are required. The planning for TQM must find a mechanism to identify the sources, and actually allocate resources.

Implementation

Among the various stages of adoption of innovation, implementation is really the stage where innovation is actually adopted. In other words, implementation implies conversion of each of the planned items into action. It is an important and a good practice to maintain meticulously detailed diary of experiences as the plans are implemented. This recording of experiences provides data and information for review and decision making for mid-course corrections of plans, and modifications. Obviously, the stage of evaluation is also included within this stage, since evaluation is also part of planning.

On the basis of the experience gained through the adoption and evaluation, the innovation as well as the process of adoption can be modified and continued. This continuation itself is a sustained process of adoption of innovation. This is the stage where an innovation is internalized and it becomes part and parcel of the organizational process and also ethos.

While a particular innovation is internalized into the system, it results in change in the process of working. As more and more innovations are internalized, institutions develop a new culture — culture of change and self-renewal. Beyond culture is ethos where change becomes natural and hence sustainable. This concept of sustainability (Frazier, 1997) is directly linked to the next stage – the onward journey.

Revise Base-line and Take-off

On successful implementation of quality management strategies, the data on the targeted change areas should be collected and compared with the base-line data. The difference will indicate the shift in quality. Thus, base-line information with which a school started is no more valid. A new base-line would have been created. With new base-line, the journey begins again through the same cyclic rather spiralling process comprising setting new targets, creating new plan for implementation, and revision of base-line and continuation. This will make an organization continuously searching for the change and move forward.

Conclusion

Implementing TQM and getting the results – to reach the level of TQM culture requires time. Experiences indicate that it takes about five years. Crossing the stage of acceptance (psychological) is important. Projectization and project implementation is the first taste of TQM in the institution. Continuing on this trend with continuous evaluation, monitoring and re-planning will lead to the level of change as a culture. Your investment on TQM is ready to pay off once you have entered the stage of culture.

Unlike other approaches to quality management, TQM is a human-oriented, human-based technique. Infrastructure and technology may be an additional help in managing quality with TQM; but TQM as a strategy does not get immobilized due to absence of such facilities. Indian schools, the large Open-Basic category, despite the missing infrastructure and technology, is endowed with potentially rich human resources. By optimizing that human component, Indian schools can go a long way. The challenge before the principal is being able to generate the culture of 'Gung Ho' (Chinese expression meaning working together and title of the famous book by Blanchard and Sheldon, 1998) – creating the sense of worthwhileness about teaching among the teachers, giving them independence and encouragement; of course, mentoring leadership among the colleagues.

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Appendix I

Classroom Teaching Competence Scale (CTCS)

Instruction: Study the indicators, given in the Ground Rules, related to 0, 1, 2, 3, and 4 for each of the items prior to rating a lecture. Please check against any of the numbers against each item in each column. All items must be rated.

No.	Statement	0	1	2	3	4
1	Aims are clear to the teacher and students	0	1	2	3	4
2	Content appropriate to the stated or unstated aims and level of students	0	1	2	3	4
3	Teaching techniques appropriate to the student	0	1	2	3	4
4	Introduction was effective -- caught students' attention and established rapport	0	1	2	3	4
5	Content broken into small bits to enable students to learn step by step	0	1	2	3	4
6	Learning of concepts and principles ensured through verbal or concrete examples	0	1	2	3	4
7	Sequencing was logical	0	1	2	3	4
8	Students actively participated in learning	0	1	2	3	4
9	Teacher questions were at proper level	0	1	2	3	4
10	Students were free to raise doubts/ask questions	0	1	2	3	4
11	Positive reinforcement evident	0	1	2	3	4
12	Communication was effective	0	1	2	3	4
13	Chalkboard work was effective	0	1	2	3	4
14	Students interest was sustained	0	1	2	3	4
15	Assessment of student attainment in relation to aims was appropriate	0	1	2	3	4
16	Link-up of main points at the end of the lesson was proper	0	1	2	3	4
17	Planning of the lesson was evident	0	1	2	3	4
18	Confidence in content was evident	0	1	2	3	4

Ground Rules for Classroom Observation

I AIMS CLEAR TO THE STUDENTS

1. Aim was not mentioned at all. (Just mentioning the title of the topic is not statement of aim).
2. Aims were mentioned but not made very clear (say, in behavioural terms).
3. Aims were explicitly stated. These were explained in particular sequence to student.

II CONTENT APPROPRIATE TO THE STATED/UNSTATED AIMS

1. Random selection of content. Relevance with aims not established.
2. Content had its own logic but not completely in correspondence with aims.
3. Content had one-to-one correspondence with aims. Teacher deliberately related content to aims.

III TEACHING TECHNIQUE APPROPRIATE TO THE CONTENT

1. Technique adopted was totally inappropriate.
2. Technique adopted was suitable but not properly executed.
3. The selection of the technique was very well suited to the content. The execution of the technique was good/successful.

IV INTRODUCTION EFFECTIVE - CAUGHT STUDENTS' ATTENTION

1. Commencement of content teaching was abrupt. No introduction, not even a statement like - we will discuss " " today.
2. Tried to make an introduction, but succeeded partially, couldn't catch majority's attention.
3. Introduction made the students eager to learn. Almost all were set to listen.

V CONTENT BROKEN INTO SMALL BITS

1. The teacher simply delivered whatever he new, as a total package.
2. Content was broken in to small steps but no feedback was taken.
3. Teacher taught the content in small steps. He took feedback to ascertain learning.

VI CONCEPT AND PRINCIPLES OF LEARNING ENSURED THROUGH VERBALISED OR CONCRETE EXAMPLES

1. Understanding of concepts and principles was taken for granted. Examples/demonstrations were not used.
2. Examples were used in most occasions but not always appropriately or examples were used in half the occasions and appropriately.
3. Appropriate examples/demonstrations were used for the concept/principles. Such examples were clarificatory.

VII SEQUENCING LOGICAL

1. Content was in bits and pieces without any logic.
2. Logic was evident in many cases. Equally, there were missing links as well.
3. One bit appeared to be the logical next step of the previous one. Logic was evident in presentation.

VIII STUDENTS' ACTIVE PARTICIPATION IN LEARNING

1. Student, had absolutely no work to do except listening, if they felt like doing so.
2. At times students had work – taking notes and also answering questions, solving problems. But for half the time, they were feeling bored.
3. Students were kept alert. They answer question, participate in discussion, solve problems, sketch figures etc. and also take notes.
4. (2, emphasis on taking notes, 4 emphasis on answering, participation in discussion, solving problems etc.)

IX TEACHER QUESTIONS AT PROPER LEVEL

1. Questions were not asked to students. 'You understand?' 'You follow?' Not treated as questions.
2. Teacher did ask questions. Only some of them were purposeful. Only a few students were involved in answering all questions.
3. Questioning made the lesson alive. Large number of questions were asked to majority of the students. Teacher did not discourage students giving wrong or partially correct answers. He used remedial measures where students could not answer.

X STUDENTS WERE FREE TO RAISE DOUBTS/ASK QUESTIONS

1. No question or doubt was raised by any student. Students were discouraged from asking questions and getting doubts cleared.
2. Some of the student questions were brushed off/or ignored while some others were properly tackled.
3. Students asked large number of questions and these were handled in a friendly and encouraging manner. (teacher answered himself or got the answer from some other student.)

XI POSITIVE REINFORCEMENT EVIDENT

1. The lecture was a one way affair. No question of reinforcement (appreciation, praise or even rebuke) was used.
2. Either correct or incorrect responses were reinforced or half of the students' participation (response or question) was reinforced.
3. All responses got reinforced irrespective of the correctness of response.

XII COMMUNICATION WAS EFFECTIVE

1. Expression poor and incomprehensible – lot of distracting mannerisms.
2. Students understand the teacher partly – sometimes check whether the students are understanding.
3. Clear expression – frequent checking up as to whether students are understanding or not, repeats if necessary, absence of distracting mannerisms.

XIII CHALKBOARD WORK EFFECTIVE

1. Chalkboard not used when lesson needed it – if used to a limited extent, work slipshod, handwriting not legible, no layout of the chalkboard.
2. Handwriting legible even by backbenchers – but sketch work poor or vice versa. Chalkboard layout not satisfactory though legible.
3. Handwriting legible by all – sketch work good – layout good – He clears the chalkboard while leaving the class.

XIV STUDENTS' INTEREST SUSTAINED

1. Students talked amongst themselves. Dozed, created disturbance, yawned, looked outside. Students appeared to be getting bored for a considerable time – Teacher ignored or connived at this – Helpless situation.
2. For only half of the time, students showed signs getting bored.
3. Students were attentive, carefully listening, asking questions for minor doubts/clarifications, taking notes. Kept the class alive. From the very beginning – Used appropriate techniques for promoting interest whenever it dropped.

XV ASSESSMENT OF STUDENT ATTAINMENT IN RELATION TO AIMS APPROPRIATE

1. No efforts made to assess student attainment. The infrequent efforts made had very little to do with the stated, unstated aims.
2. Assessment made through oral questioning of few students at intermediate and final stages. Students not sampled for such assessment. Tried to evaluate points other than key points.
3. At intermediate stages and/or asking a few questions to students selected almost at random helped in assessment (purposeful means helping assessment of learning only).

XVI PROPER LINK-UP OF MAIN POINTS AT THE END OF THE LESSON

1. No summarizing, just finished when time was over.
2. Some key points taught earlier were mentioned at the end of the lesson. But neither there was link nor recorded on the chalkboard.
3. Main points were recorded on the chalkboard/main points were dictated to be noted down. Collected summary by asking questions; link between the consecutive points also made out.

XVII PLANNING OF THE LESSON EVIDENT

1. No time scheduling – went astray many times – was just waiting for the finish or rushed up very fast towards the end – students could make him go astray easily. Had no notes of any sort with him.
2. Sometimes there appeared to be planned approach, sometimes not.
3. Kept up time. Planned and systematic approach evident – pace of progress was same throughout. Any attempt made for going astray was successfully tackled.

XVIII CONFIDENCE IN CONTENT EVIDENT

1. Got confused himself – parried doubt and questions. Created confusion amongst students also.
2. Confusion was evident at times.
3. No content errors committed. Confident. Explained the points in different ways. Prepared for any question. Appeared as master of the subject.

Appendix II

Mukhopadhyay's Institutional Profile Questionnaire¹ (MIPQ)

This questionnaire provides you with an opportunity of reflecting on various aspects of your institute; and thereby create a mirror image of your institution for you to see and examine. Number of statements are given below. When you examine each statement you may feel that the statement, for your institute, is either:

- (a) Very true
- (b) Largely True
- (c) Partly true
- (d) Not sure
- (e) False

You only have to select your response against each statement and accordingly check (✓) the response. Please note that you have to

- (a) respond to all items
- (b) respond freely and frankly, lest the profile may not be real
- (c) consider each item independently and respond in the sequence presented to you, (and please do not go back and forth).

Please do not write your name anywhere – this would facilitate in keeping your free and frank opinion confidential.

No.	Statements	VT	LT	PT	NS	F
1	The Principal shows a lot of initiative	VT	LT	PT	NS	F
2	Teachers do prepare before teaching	VT	LT	PT	NS	F
3	It is an isolated institution.	VT	LT	PT	NS	F
4	Students organize student activities skillfully	VT	LT	PT	NS	F
5	Co-curricular activities are considered necessary	VT	LT	PT	NS	F
6	Teachers review their teaching from time to time	VT	LT	PT	NS	F

¹ Designed by By Prof. M. Mukhopadhyay, Senior Fellow, National Institute of Educational Planning and Administration, New Delhi.

7	Office of the institution is in lousy condition	VT	LT	PT	NS	F
8	There is good social relationship between Principal and the Staff	VT	LT	PT	NS	F
9	There is almost no teaching aid available in this institution	VT	LT	PT	NS	F
10	Exams are merely a routine, not used for improving teaching learning	VT	LT	PT	NS	F
11	Most of the teachers enjoy their jobs here	VT	LT	PT	NS	F
12	Principal is very dynamic	VT	LT	PT	NS	F
13	Most of the teachers teach just because they have to earn their bread	VT	LT	PT	NS	F
14	The teachers and experts from other places visit this institution	VT	LT	PT	NS	F
15	Students are not much interested in their studies	VT	LT	PT	NS	F
16	Co-curricular activities do not have any significant place here	VT	LT	PT	NS	F
17	Teaching here is mostly dictating notes or reading from the text books	VT	LT	PT	NS	F
18	Officers do not indulge in underhand dealings	VT	LT	PT	NS	F
19	Each person and each group in this institution are only interested in their own benefit	VT	LT	PT	NS	F
20	Material resources are quite good here	VT	LT	PT	NS	F
21	Examinations use various types of test items like objective type, short answer types tests, etc.	VT	LT	PT	NS	F
22	Most of the teachers enjoy their job here	VT	LT	PT	NS	F
23	The Principal does not enjoy the confidence of the faculty	VT	LT	PT	NS	F
24	If there is an opportunity, most teachers will avoid exam. related works	VT	LT	PT	NS	F
25	It does not maintain any contact with outside agencies	VT	LT	PT	NS	F

26	Students in this institute are usually very good	VT	LT	PT	NS	F
27	Co-curricular activities involve all the teachers	VT	LT	PT	NS	F
28	Most teachers manage their classes well	VT	LT	PT	NS	F
29	It takes lot of time to get any help from the office	VT	LT	PT	NS	F
30	Most of the teachers have intimate friends within the faculty	VT	LT	PT	NS	F
31	Library, Laboratory or classes – every place is dirty and look like godowns	VT	LT	PT	NS	F
32	Exam papers are not in keeping with a well developed assessment scheme	VT	LT	PT	NS	F
33	Staff always grumbles here	VT	LT	PT	NS	F
34	Principal shows lot of concern for the staff	VT	LT	PT	NS	F
35	Teachers are adequately trained	VT	LT	PT	NS	F
36	The ex-students often visit the institution	VT	LT	PT	NS	F
37	Many students stay away from the classes	VT	LT	PT	NS	F
38	Only a few students take part in co-curricular activities	VT	LT	PT	NS	F
39	The students are not properly checked of their learning by many teachers	VT	LT	PT	NS	F
40	The office is very helpful	VT	LT	PT	NS	F
41	Teachers are divided into warring groups	VT	LT	PT	NS	F
42	There is significant effort to build up material resources	VT	LT	PT	NS	F
43	Students get opportunities to discuss their exam result with the teachers	VT	LT	PT	NS	F
44	Teachers are very happy here	VT	LT	PT	NS	F
45	Principal does not take any interest in solving the problems of the staff	VT	LT	PT	NS	F
46	Most of the teachers have strong command over their subject	VT	LT	PT	NS	F

47	Most of the teachers are not members of the local clubs	VT	LT	PT	NS	F
48	Students take studies seriously	VT	LT	PT	NS	F
49	Co-curricular activities are organized through-out the year, according to an annual plan	VT	LT	PT	NS	F
50	Teachers really care whether students understand their lessons or not	VT	LT	PT	NS	F
51	There is no common procedure in dealing with the employees – rule changes with the person	VT	LT	PT	NS	F
52	Teachers work as teams in this institution	VT	LT	PT	NS	F
53	Laboratories are not adequately equipped	VT	LT	PT	NS	F
54	Essay type tests are most commonly used in exams.	VT	LT	PT	NS	F
55	At the first opportunity, most teachers will leave this institution	VT	LT	PT	NS	F
56	Principal avoids taking important decisions	VT	LT	PT	NS	F
57	Even if provisions are made, most of the teachers would not like to undergo training	VT	LT	PT	NS	F
58	Parents frequently visit the institution and discuss with the teachers	VT	LT	PT	NS	F
59	Students are very weak in their expression	VT	LT	PT	NS	F
60	Cultural activities are organized to patronize only a few pet students	VT	LT	PT	NS	F
61	Curriculum is usually not completed in the class	VT	LT	PT	NS	F
62	Office manages admission systematically	VT	LT	PT	NS	F
63	There are a few small cliques in the faculty and they are after each other	VT	LT	PT	NS	F
64	During the last several years there has been considerable addition to the material resources	VT	LT	PT	NS	F
65	There are no partialities in awarding marks in exams	VT	LT	PT	NS	F

66	Principal enjoys working in this institution	VT	LT	PT	NS	F
67	Principal has a development plan for every staff	VT	LT	PT	NS	F
68	Teachers often complain about lack of facilities, more workload, etc. in this institution	VT	LT	PT	NS	F
69	No, this institution does not have contact with other institutions	VT	LT	PT	NS	F
70	Students do not unnecessarily trouble the teachers	VT	LT	PT	NS	F
71	Besides sports and games, there are number of other major student activities	VT	LT	PT	NS	F
72	Most of the teachers use audio-visual aids while teaching	VT	LT	PT	NS	F
73	Office makes a mess of admission of students	VT	LT	PT	NS	F
74	The administrative staff maintain good relation with the teachers	VT	LT	PT	NS	F
75	The maps and charts are usually torn and eaten by moths	VT	LT	PT	NS	F
76	There is no scheme of continuous assessment	VT	LT	PT	NS	F
77	There is lot of complaint about management and facilities	VT	LT	PT	NS	F
78	Principal does not take any interest in co-curricular activities	VT	LT	PT	NS	F
79	Most of the teachers are well qualified	VT	LT	PT	NS	F
80	Institution maintains regular links with the old students	VT	LT	PT	NS	F
81	Students look for opportunities to harass the principal	VT	LT	PT	NS	F
82	There is lack of balance in the choice of co-curricular activities	VT	LT	PT	NS	F
83	Most of the teachers only give lectures, do not use any other method	VT	LT	PT	NS	F
84	Office records are properly maintained	VT	LT	PT	NS	F
85	The teachers do not visit each other at home	VT	LT	PT	NS	F

86	Library books are continuously updated	VT	LT	PT	NS	F
87	Lot of care is taken in paper setting and evaluating answer sheets	VT	LT	PT	NS	F
88	Hardly any one makes any complaint here.	VT	LT	PT	NS	F
89	Principal has done lot of good things during the last several years	VT	LT	PT	NS	F
90	Teachers criticize the principal at his/her back	VT	LT	PT	NS	F
91	Principal is not member of any local body	VT	LT	PT	NS	F
92	Students do not while away their time	VT	LT	PT	NS	F
93	There is an institutional plan for organizing co-curricular activities	VT	LT	PT	NS	F
94	Most of the teachers develop teaching plans	VT	LT	PT	NS	F
95	Instead of service, office corners all facilities for itself	VT	LT	PT	NS	F
96	Teachers relate very well with the students	VT	LT	PT	NS	F
97	Projectors are either not there or are out of order	VT	LT	PT	NS	F
98	It takes considerable time to announce the exam. results	VT	LT	PT	NS	F
99	The principal is very unhappy in the present job	VT	LT	PT	NS	F
100	Principal finds it difficult to manage the staff meetings	VT	LT	PT	NS	F
101	Most of the teachers take active interest in the activities of the institute	VT	LT	PT	NS	F
102	Institute gets outside people to speak to the students and the faculty	VT	LT	PT	NS	F
103	Students do not attend the classes regularly	VT	LT	PT	NS	F
104	Sports and cultural activities are usually very poorly organized	VT	LT	PT	NS	F
105	Most of the teachers do not teach well	VT	LT	PT	NS	F

106	Office records are easily traceable	VT	LT	PT	NS	F
107	Staff come and go, they do not socialize with each other	VT	LT	PT	NS	F
108	Library is very good	VT	LT	PT	NS	F
109	Exam results are used to give feedback for improvement in learning	VT	LT	PT	NS	F
110	Students are very proud of their institution	VT	LT	PT	NS	F

Scoring Key

Instruction:

1. Give a numerical score according to the following schedule:

Very True (VT)	= 4
Largely True (LT)	= 3
Partly True (PT)	= 2
Not Sure (NS)	= 1
False	= 0

2. Please use one scoring sheet for each respondent. If there are 25 teachers responding to MIPQ, there should be 25 such sheets.
3. The test items pertain to 11 sub areas as indicated in the key below. Please transfer your score for every item in the blank space provided just below the item number. Add the scores of first five items that are positively keyed and enter in the last column. Add scores of the remaining five items that are negatively keyed and enter in the last column with the negative sign. To get your score on the item like leadership, subtract score (b) from (a). The total score on each sub-area can be positive or negative. For collective score of a school, find the average of the scores from different response sheets on each sub-area. Do not add scores, thus arrived on 11 heads together; these scores on 11 areas are used to draw institutional profile.

Sample Tabulation Sheet

[illegible]

Appendix III

School Information/Data Blank

1. Institution's results (Performance Index) in Board examinations

Class X

Class XII

This year=

This year=

Last year=

Last year=

Increment/decrement =

Increment/decrement =

No. of first classes = No. of first classes =

No. of distinctions = No. of distinctions =

2. Total enrolment of the School Boys _____ Girls _____

3. Class-wise enrolment: transition rates

Years →	1995	1996	1997	1998	1999
Grades ↓					
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

4. Resources and facilities

Years →	1995	1996	1997	1998	1999
Facilities ↓					
No. of classrooms					
No. of books in the library					
No. of periodicals subscribed					
Total number of books issued					
Teaching aids available in the Institution					
No. of charts					
OHP					
VCR/VCP					
Two-in-one					
Computers					
Other aids					
No. of other rooms available in the School					
Hall					
Activity room					
Stores					
Staff room(s)					
Laboratories					
Art room					
Music room					
Library room/					
Reading room					
No. of toilets:					
For boys					
For girls					
For staff					
Drinking water taps					
No. of display boards					
No. of trees					
No. of flower pots					
No. of displayed pictures					
First aid facility					

Annual budget					
Development fund					
Staff Sanctioned					
Staff in Position					
Shortage of Staff					

5. Outstanding achievements of the Institution

Years	1995	1996	1997	1998	1999
Activities					
Public Exam					
Sports					
Field Events					
Track Events					
Throw Events					
Others					
Games					
Indoor					
Outdoor					
Cultural Activities					
Dramatics					
Concert					
Painting					
Others					
Co-academic					
Debate					
Symposia					
Essay					
Competition					
Others					

Appendix IV

Questionnaire for Principal

Please read each statement carefully and indicate your agreement or disagree on a five-point response pattern – Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (DA) and Strongly Disagree (SD).

No.	Statement	SA	A	NS	D	SD
1.	I check with students what do they want to achieve through schooling here	SA	A	NS	D	SD
2.	I am quite satisfied with the quality of our education	SA	A	NS	D	SD
3.	Parents are involved in planning the future of the school	SA	A	NS	D	SD
4.	I am member of local community organizations	SA	A	NS	D	SD
5.	We organize lectures for parents.	SA	A	NS	D	SD
6.	There is a lot of scope for improvement of quality	SA	A	NS	D	SD
7.	Teachers choose the responsibilities they want	SA	A	NS	D	SD
8.	Teachers are encouraged to experiment with teaching	SA	A	NS	D	SD
9.	Parents are involved in organizing annual days/sports and other such programmes	SA	A	NS	D	SD
10.	Teachers participate in local community based functions	SA	A	NS	D	SD
11.	I check with students their expectations from co-curricular activities	SA	A	NS	D	SD
12.	Teachers discuss in details about new developments in education and emerging career opportunities with parents	SA	A	NS	D	SD
13.	Teachers collectively prepare their annual curricular plan.	SA	A	NS	D	SD

14.	We encourage innovation in teaching	SA	A	NS	D	SD
15.	Parent Teacher Association reviews quality of academic programme of the school	SA	A	NS	D	SD
16.	I participate in state level meetings and programmes	SA	A	NS	D	SD
17.	I check with parents their expectations from the school	SA	A	NS	D	SD
18.	We discuss with teachers and staff expectations of parents and students	SA	A	NS	D	SD
19.	We have a clear plan of quality improvement	SA	A	NS	D	SD
20.	Teachers are allocated responsibilities on the basis of their choice and voluntary offers	SA	A	NS	D	SD
21.	Teachers undertake action research	SA	A	NS	D	SD
22.	We invite professionals from different walks of life to the school	SA	A	NS	D	SD
23.	I ask parents their expectations from their wards.	SA	A	NS	D	SD
24.	Teachers are exposed to new developments in educational methodology	SA	A	NS	D	SD
25.	Our priority is not only to pass the students, but develop all round qualities	SA	A	NS	D	SD
26.	Teachers are involved in management of school.	SA	A	NS	D	SD
27.	Teachers are free to innovate	SA	A	NS	D	SD
28.	Parents are involved in mobilizing resources for the school	SA	A	NS	D	SD
29.	We allow school facilities to be used by community organizations	SA	A	NS	D	SD
30.	I ask my staff about their	SA	A	NS	D	SD

	expectations from the school					
31.	Students are oriented on their rights and duties vis-à-vis school	SA	A	NS	D	SD
32.	We are making specific efforts to improve quality	SA	A	NS	D	SD
33.	Teachers and staff are involved in deciding the future development of the school.	SA	A	NS	D	SD
34.	School supports innovative activities	SA	A	NS	D	SD
35.	Parents are invited to address teachers and students	SA	A	NS	D	SD

Scoring Procedure for Principal's Questionnaire

The Questionnaire has been developed around seven sub-areas, namely, Customer Orientation, Client Education, Satisfaction with quality, Participation, Innovation and Independence, Parents' Involvement and Linkage with outside agencies and community. Against each sub-area, the items number has been indicated in the table below.

Allocate a score of

- 4 for SA,
- 3 for A,
- 2 for NS,
- 1 for D and
- 0 for SD.

Calculate score for each area separately.

Sub-areas	Items				
	1	11	17	23	30
Customer Orientation					
Client Education	5	12	18	24	31
Satisfaction with Quality	2	6	19	25	32
Participation	7	13	20	26	33
Innovation	8	14	21	27	34
Parents Involvement	3	9	15	28	35
Linkage	4	10	16	22	29

Appendix V

Students' Questionnaire

There are ten statements about the school below. You may or may not agree with the statements. Please indicate your degree of agreement against each statement by checking against one of the five columns -- Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (D) and Strongly Disagree (DA).

Please respond to each item honestly and forthrightly. You do not need to write your name; hence your opinion will remain confidential.

S. No.	Statements	SA	A	NS	D	SD
1	My school is preparing me for the future					
2	I am proud of my school					
3	Teachers take lot of care for us					
4	Principal takes lot of interest in the school					
5	Teachers teach very well					
6	Teachers are not partial in awarding marks to students					
7	Our school has good facilities					
8	All children are encouraged to participate in co-curricular activities					
9	School maintains strict discipline					
10	School appreciates and recognizes good behaviour					

Instructions for Scoring

Score each item with a numerical score as given below

- 4 for SA
- 3 for A
- 2 for NS
- 1 for D
- 0 for DA

Find average of scores in each item for all the students respondents.
Record the average score against each item.

Appendix VI

Parents' Questionnaire

There are ten statements about the school below. You may or may not agree with the statements. Please indicate your degree of agreement against each statement by checking against one of the five columns -- Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (D) and Strongly Disagree (DA).

Please respond to each item honestly and forthrightly. You do not need to write your name; hence your opinion will remain confidential.

No.	Statements	SA	A	NS	D	SD
1	Parents are consulted on the development of the school	SA	A	NS	D	SD
2	Teachers receive and treat parents well	SA	A	NS	D	SD
3	Principal receives parents with respect and eagerness	SA	A	NS	D	SD
4	Overall, parents are satisfied with the school	SA	A	NS	D	SD
5	The school has good facilities	SA	A	NS	D	SD
6	Co-curricular activities are treated as important activities in the school	SA	A	NS	D	SD
7	Parents are satisfied with discipline and management of cases of indiscipline	SA	A	NS	D	SD
8	School is conscious of quality in education	SA	A	NS	D	SD
9	School enjoys a good reputation among parents	SA	A	NS	D	SD
10	School prepares children for the future challenges	SA	A	NS	D	SD

Instruction for Scoring

Score each item with a numerical score as given below

- 4 for SA
- 3 for A
- 2 for NS
- 2 for D
- 1 for DA

Find average of scores of each item for all the Parent Respondents.
Record the average score against each item.



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